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ABSTRACT

The Strategic Planning Task Group (SPTG) of Ontario was mandated to determine and recommend priorities that should be addressed within 5 to 20 years. Many aspects of the work of the SPTG for the past 4 years are consolidated in this report. The first two chapters of part 1 outline in broad terms some of the altered or altering circumstances that will affect Ontario's social and economic organization and education. Global conditions cited are: violence; disparity and inequality; geographic power shifts; increased need for learning, information and knowlege; and technology. Conditions and implications for education explored at the provincial level include demographic and cultural change, changing social institutions, and changing work roles. The third chapter describes those beliefs and attitudes that are currently affecting, and will continue to affect, Ontario education. Part II details the long-term implications springing from these conditions and beliefs that SPTG felt were significant in pointing towards new directions in education. These new directions are grouped under the following three headings: (1) learners and learning, (2) curriculum and teaching, and (3) service delivery and governance. A 62-item bibliography is appended. (MLF)

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Towards the Year 2000:

Future Conditions and Strategic Options for the Support of Learning in Ontario

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Harry K. Fisher, Deputy Minister

Ontario Ministry of Education
Ontario Ministry of Colleges and Universities

Towards the Year 2000

Future Conditions and Strategic Options for the Support of Learning in Ontario

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FOREWORD

In January, 1980, a strategic planning process was formally adopted by the Ministries of Education and of Colleges and Universities. The decision to do so grew out of a growing awareness within the ministries of the many changes that were occurring in Ontario society and of the need for these changes to be more systematically monitored and assessed from a broad, organization-wide perspective. The assumption was that the system of education which could best serve its society would be one which would most adequately engage with the changing conditions of that society. This assumption was made explicit on the first page of Issues and Directions, the ministries' response to the final report of the Commission on Declining School Enrolments in Ontario:

> The values of a society are both reflected and shaped by its educational system. In its reflecting role, education must honour the values and ideals considered important by society; in its shaping role, education must provide leadership and vision. An education system that fulfils these two roles must be based on an understanding of what society is and what it may become (1980).

The formal adoption, by the ministries, of a strategic planning process flows naturally from this assumption.

Senior planning personnel drawn from all divisions in the ministries were constituted as a Strategic Planning Task Group (SPTG). One of the mandates given that group was to determine and recommend priorities that should be addressed within a planning horizon of five to twenty years. This report attempts to fulfil that mandate, and consolidates many aspects of the work of the SPTG for the past four years. This work is reflected in the numerous reports and occasional papers produced or sponsored by the SPTG which are listed in the document accompanying this report.

This document is intended to be a planning resource and the basis for a more widely ratified "strategic plan". It has a two-part structure. Part I outlines on the one hand the major future conditions which Ontario faces and on the other the beliefs which form the foundation upon which Ontario education now rests. Part II details the long-term implications springing from these conditions and beliefs.

This report is not intended to be encyclopaedic in scope. It treats only those conditions, beliefs, and implications which the SPTG felt were significant in pointing towards new directions in education. These new directions, given in Part II of the report, are grouped under the following three headings:

- learners and learning
- curriculum and teaching
- service delivery and governance

It is hoped that this document will be successful in providing future perspectives on present and projected programs and policies, and prove useful in planning the most appropriate courses of action for the ministries to follow in the years ahead. This is an important task, and in this context the words of Harold Shane in his presentation to the SPTG bear repeating:

> The future is not an endless road we are condemned inexorably to follow. It is a fan-shaped array of alternative possibilities. It is essential to remember that we create the future. The role of education in the process is potentially so important that it is difficult to overstate its contribution as the world's nations move through the human revolution of the present (SPTG, 1981c).

INTRODUCTION AND BASIC ASSUMPTIONS

> Nevertheless, in spite of the dangers, it is a wonderful age to live in, and I would not wish to be born in any other time. The wonderful and precious thing about the present moment is that there is still time--the Bomb hasn't gone off, the population explosion may be caught, the technological problem can, perhaps, be solved. If the human race is to survive, however, it will have to change more in its ways of thinking in the next twenty-five years than it has done in the last twenty-five thousand.
>
> Kenneth E. Boulding

Humans are by nature learners. Like all living things, we must learn about and adapt to changing environments in order to survive. But we seem to be especially adept at learning: we can use a highly complex language system to communicate, to think, and to question our place in nature, and we have developed sophisticated forms of technology to help us extend the range and application of our knowledge.

There have been life forms on this planet for about three billion years. However, it is only in the last two hundred thousand years that there have been what we would recognize as human beings, a mere .0067 per cent of that time. And yet the learning which has taken place in that short time has been extraordinary--enough, for example, to photograph not only the infinitesimal tracks of sub-atomic particles, but also the very earth itself, seemingly suspended in space.

Even so, by far the greater number of these learnings have occurred in the comparatively recent past. In quantitative terms, for example, it can be said that the knowledge gained in the nineteenth century exceeded the total gained in previous centuries. At present, given the array of complex information-sharing and processing technologies currently in use, it is arguable that the total store of information in the world doubles every two years. The pressures now on human learning capabilities are now intense, and they will not ease. For our survival's sake we must not only continue what we already by

nature do, which is to learn, we must, as Kenneth Boulding's opening quotation implies, improve that learning.

In this context, it is essential that we reaffirm, at the beginning of the report, our view of the importance of the established education system. We do this because there is a great deal of talk, some but not all of it in the futures literature, about the possibility of, or need for, the deinstitutionalization of education systems. This nas two sources: a distrust of institutions in general, and a sense that educational institutions are becoming functionally irrelevant. In the first place, critics claim that such institutions are impersonal, bureaucratic, alienating, and cater mostly to the average student. In the second, it is argued that improved methods of service delivery, especially the microcomputer, will make education largely independent of educational institutions, and that more relevant settings for education and training may be found, for instance in the home or workplace.

Both arguments have merit, and there is little doubt that a broader diffusion of loci for educational activity will and should take place, as this report will demonstrate. At the same time, it is essential that the positive aspects of the situation not be overlooked. Schools, colleges, and universities are not only institutions, they are also communities. As such they offer opportunities for crucial kinds of learning--learning to share, to cooperate, to accommodate, in addition to the forms of intellectual learning that take place there. And it is because they are communities in this sense that they can serve as forums where planning goals can be negotiated, where the purposes of the individual can be tested against or translated into the purposes of the society, and vice versa. As Neil Postman has observed:

> The classroom is not a place of simple teacher-student interaction--not even when the teacher closes the door. It is a place in which the claims of various political, social, and economic interests are negotiated. The classroom is both a symbol and a product of deadly serious cultural bargaining (Postman, 1980).

In these terms it might be said that the education system is for civil society what the parliamentary system is for the state--the place where the individual and the society can express themselves to each other.

It is this consciousness of the importance of the mediating role of the established system, coupled with the vital importance of improving adaptive learning, which leads us to base this report on the following assumptions:

- Future well-being depends on purposeful change and planned adaptation to change

- Planning requires defining of purposes

- New social goals in democratic societies must grow out of established values to be achievable

- The definition of educational goals must be widely negotiated so that both social and individual needs may be taken into account

- The education system as a whole is an essential forum or mediating structure in which this process of negotiation can take place

- Change and adaptation to change depend on learning and therefore deeply involve education

- The rapicity of change demands that systems for the support of learning be diversified and extended and that the rate and quality of learning be vastly improved.

In closing, two further points should be made. The first is methodological. The challenge to planners, negotiators, and those who implement plans is to avoid the "environmental fallacy", that is, the tendency to focus on only one or two variables in the system which have previously been pinpointed as being flawed. The danger in this approach is that, since all parts of a system are interrelated in the most complex and interdependent ways, such tinkering can lead to

various kinds of disequilibrium and unintended consequences. The measures that are described in this report have been formed as much as possible to be sensitive to this danger.

The second point concerns the financial resources for the support of learning and education in Ontario. Since this report contains some strong suggestions for restructuring and innovating in the education system, the question must immediately come to mind, how will resources be found and allocated to implement these measures? It is our view that this question is best answered after a reading of the report, when the major barriers to implementation will be seen to be not financial but conceptual.

PART I – CONDITIONS

In the first two sections of Part I, we outline conditions that will affect education in Ontario over the next five to ten years. We do this from two perspectives: the global and the provincial. There is an important reason for doing so.

Education in Ontario can hardly take place in a vacuum. Events that occur in one part of the world ramify, and make consequences for people in other parts. An example is OPEC's dramatic increases in the price of oil beginning in 1973. Even after ten years the effects are still being felt, among other places in the ministries themselves, whose curriculum resource documents on energy and energy conservation were produced partly in response. The longevity and range of these effects illustrate a salient characteristic of the modern world: interdependence (SPTG, 1981d). Itself an effect of the expansion of trade since the seventeenth century and the improvement of communications technologies since the mid-nineteenth, it is a condition that is bound to intensify, given the fact that even further advances in communications technology lie ahead.

At the same time, there are certain conditions that exist uniquely, or will develop in unique ways, in Ontario.

The conditions described in what follows have been drawn from the results of the scanning process of the Strategic Planning Task Group. Such conditions present a background of trends against which we expect education to function in the forseeable future. In Part II, as the options themselves are discussed, they will be related more particularly to converging conditions which will be described, as necessary, in greater detail.

1. GLOBAL CONDITIONS AND IMPLICATIONS FOR EDUCATION

1.1 Violence

The arms race between the super powers and the extraordinary destructive power of modern weapons provide a classic example of interdependence, in this case as an aspect of the strategic policy of deterrence. The rationale of deterrence requires that each side has, and knows the other side has, enough retaliatory ability to make a first-strike victory impossible. To maintain deterrence, moreover, each side continually needs new weapons. So, built into the policy of deterrence is the necessity for it to continue. Another striking aspect of deterrence is its fragility: the likelihood that no fail-safe launch prevention system will be completely fail-safe is great.

Against this background of danger, nations continue to assert themselves violently: there are, at present, approximately forty "conventional" wars being fought in various parts of the world. International terrorism is an almost daily event. And more and more countries have acquired sophisticated conventional weapons and are acquiring the ability to produce nuclear weapons. The probabilities of limited war and the dangers of world destruction are not likely to lessen in the next two decades.

1.2 Disparity and Inequality

At present, the U.S. and Canada, with about 7 per cent of the world's population, consume about two-thirds of the world's resources (Council of Ministers of Education, Canada, 1982). It cannot be expected that the other 93 per cent of the population will be content that this disparity continue indefinitely.

The inequality between developed and less developed nations is especially acute in the area of population growth and food production. Although there are signs of a very modest slowdown in the

former, increases in food production still do not keep pace with population increases. At present, about 12 per cent of the world's population are estimated to be undernourished (Times Atlas, 1980). Moreover, almost all of the world's arable land is now under cultivation. To increase it would risk damaging the ecosphere; the costs of preventing the loss of marginal lands by erosion or the depletion of soil nutrients are closely tied to the costs of energy. Therefore the contrast between well-fed nations with relatively stable populations and those which cannot feed their growing populations will continue, the danger to global stability being obvious.

1.3 Geographic Power Shifts

The managerial and technological strengths of the developed countries have for the last three hundred years, dominated world affairs. However, this traditional basis for power is being increasingly lessened by the transfer of both technique and technology to the developing world. As the needs and aspirations of these countries are further stimulated, their role in world politics will continue to change. As in any other period of shifting balances of power, there is no reason to expect that changes will be accomplished without some degree of fear, competitiveness, coercion, or violence.

1.4 Increased Need for Learning

Globally, there will be a dramatic growth in learning needs. At the same time, there will be a shrinkage of financial resources for education, an increasingly poor fit between education and employment, and continuing educational inequalities.

By 2000, close to two billion new learners will have been added to the world's population. Most of these, about 80 per cent, will be in the developing countries. Thus the largest part of the burden will have to be met by countries least able to afford it.

Through the 80s and 90s, it is likely that the relative budgetary priority of education will decline in most countries,

developed and developing. Levels of economic growth will never exceed, let alone in most cases reach, the average levels of the 50s and 60s. Competition from other sectors, not least of which in many countries will be the military, along with increasing public criticism and possible taxpayer resistance, will force governments towards restraint. At the same time, especially in the developed countries, per student costs will continue to rise despite declining enrolments. These increasing costs are consequences of the increasing average ages, years of experience, and therefore salaries, of teachers.

The increasing imbalance between education systems and employment markets will continue to be a major contribution to youth unemployment. In addition, in developed countries, the supply of educational credentials is expanding faster than the supply of job openings traditionally linked to particular credentials (Coombs, 1982). This adjustment process involves a gradual devaluation of credentials and corresponding upgrading of educational qualifications for various jobs, although the comparatively greater diversity and flexibility of industrial economies may mitigate the severity of employment prospects. In developing countries, where population growth is greatest and the supply of public sector jobs (the traditional source of work) largely gone, the effects will be more serious. Educated young people will have to seek work beneath their aspirations and qualification level, thus displacing those below them; the amounts of discontent may reach politically dangerous levels, the more so as expectations are frustrated.

In developed countries, even after the extraordinary expansion of the education system in the 50s and 60s, disparities still exist: women still tend to be concentrated in certain fields, and the children of rural or lower socioeconomic urban families still tend to be excluded from higher educational levels. Inequalities are much more pronounced in developing countries, most conspicuously between rural and urban populations. Rural children, often 70 to 90 per cent of a nation's total, have a vastly smaller chance of completing even primary education, much less going on to secondary or post-secondary schools. This disparity reflects, in turn, the wider social and economic

imbalances which have stimulated urban migration and the creation of large urban slum populations (Coombs, 1982).

1.5 Information and Knowledge

Since the invention of printing in the fifteenth century, the trend has been towards wider dissemination of, and access to, knowledge. Since the "discovery" of the scientific method, over three hundred years ago, the dominant way of perceiving and making use of the world has been to measure and analyze it, to look for the rules by which it operates, and to treat it as quite distinct from the human observer. Recent developments indicate that profound changes are occurring in both these areas.

In sheer quantitative terms, as we have already suggested, the knowledge gained in the nineteenth century exceeded the total gained in all previous centuries. At present, with the array of sophisticated information processing technologies currently in use, it is estimated that the total store of information in the world doubles every two years. Yet these new technologies and their applications are still in their infancy, and it cannot be expected that the knowledge base whose essential features must in some way be the content of education will stabilize.

The change in the second area, the dominance of a particular scientific view of reality, is more likely a reversal. Since the turn of the century, physics has been challenging it, showing that at the most fundamental level matter is not composed of discrete particles but as the mathematically describable relationships among probable energy fields. The observer and observed are not distinct but interrelated. Forms of analysis that depend on the isolation of events are increasingly inadequate in the study of the complex interacting system the universe appears to be. So profound a shift in our view of the world argues for the need to change the education we design to comprehend it.

Indeed, the further we penetrate into the sub-microscopic world, the more we see the world as a system of inseparable,

interacting, and ever-moving components, with the human race being an integral part of this system. The previous scientific world view, stemming from the work of Newton and Descartes, postulated a world "outside" made up of a multitude of separate objects and events. The physicist Fritjof Capra sees such separation as a root cause of the ills currently facing the planet:

> The natural environment is treated as if it consisted of separate parts to be exploited by different interest groups. The fragmented view is further extended to society which is split into different nations, races, religions and political groups. The belief that all these fragments--in ourselves, in our environment and in our society--are really separate can be seen as the essential reason for the present series of social, ecological and cultural crises. It has alienated us from nature and from our fellow human beings. It has brought a grossly unjust distribution of natural resources, creating economic and political disorder; an over-rising wave of violence, both spontaneous and institutionalized and an ugly, polluted environment in which life has often become physically and mentally unhealthy (Capra, 1975).

While such fragmentation undoubtedly proved enormously successful over the past three hundred years, it now appears to have outlived its usefulness. We are part of, not separate from, the environment, and division into a "we" and a "they" diametrically opposes current scientific thought, where all is simply "us" (SPTG, 1981e). Seen in this light, the words of H. G. Wells in his Outline of History strike home: "Human history becomes more and more a race between education and catastrophe."

1.6 Technology

Knowledge generates technology, but technology also generates knowledge. Together, both produce change. As we move awkwardly, and no doubt more quickly than we realize, into the post-industrial era, or the information age, the impact of technological change on significant aspects of our individual lives and of our social structures will be great.

For there are other revolutions in technology beside the communications revolution. Among these some of the more startling arise from advances in biological science and its related technologies. Since the early or mid 60s, new techniques of birth control have had social and moral consequences with which we have not yet coped. Currently, new techniques of sperm storage, artificial insemination, *in vitro* fertilization, and the implantation of fertilized eggs into a host uterus are being applied to human reproduction; already these are challenging traditional conceptions of parenthood and the legal structures built around them. As these techniques are perfected, we will acquire the power not only to alter the mode and timing of reproduction to suit our convenience and to compensate for our own biological deficiencies, but to consciously select and shape the nature of our offspring. The new eugenics will be enhanced by our growing ability to manipulate genetic codes and to create for ourselves, ultimately, a brave new world of plants, animals, and humans carefully engineered to whatever specifications we desire, no longer the victims of fate or natural selection (Rifken, 1982).

So far, of course, these techniques have succeeded only with simple micro-organisms. But the potential exists, and their success in the food and brewing industries, as well as the pharmaceutical and chemical industries, will almost guarantee their extension into areas that we can only guess at.

There are, of course, many other potential new technologies, or technology generating activities: exploration of space continues; we are on the verge of exploiting the resources of the deep ocean floor; and we are coming close to being able to make peaceful use of the energy from hydrogen fusion. We are already beginning to be familiar with the effects of new technologies on the workplace; their impacts on learners, on teachers, and on the whole process of education itself lie just ahead. Indeed, the ever-growing availability and use of the personal microcomputer in educational settings (to say nothing of the home) is already altering many aspects of the educational process, whether at the elementary, secondary, or post-secondary level. This alteration will be discussed in detail later in the report, but suffice

it to say now that as hardware and good software become more accessible (and less expensive) the effect upon education will be both irreversible and profound (SPTG, 1983a).

2. ONTARIO CONDITIONS AND IMPLICATIONS FOR EDUCATION

2.1 Demographic and Cultural Change

Population projections for Ontario show a continuation of current low fertility rates (although the current echo of the baby boom will partially offset this for a limited number of years) and low migration levels (CODE, 1979). However, there will be changes in the proportions of the total population in various age groups. Between 1976 and 1991, for example, the median age of the population will increase from 28.6 years to almost 34 years. The proportion of the population aged 0-19 will decrease from 35 to 26 per cent. Numbers in the 40-64 age group will increase slightly by 1991, from 26 to 28 per cent, as will those over 65, from 9 to 12 per cent (SPTG, 1981b). Recent studies substantiate these conclusions.

Of particular interest to the ministries will continue to be the children of the baby boom. The seven million people born in Canada between 1951 and 1966 are 30 to 50 per cent more numerous than those born in the fifteen years before or after. They have already had a significant effect on the education system; as the figures above show, they will continue to exert significant pressures on government services. Since, for example, to support the elderly costs government about two and a half times what it costs to support young people, pressures for reallocation of expenditures will become more and more severe. As well, since most numbers of this group have been raised in conditions of comparatively secure affluence and consistent upward mobility, the absence of these conditions in the future may cause severe strains.

The characteristics of the baby boom generation have been much studied. As a whole it has received more formal education than any other in history--twelve years on average. But this schooling has been accomplished during a period when educational practice was not as much concerned with the detailed mastery of structured bodies of

knowledge as it was with stressing inter-personal skills and the affective domain. It places great emphasis on feelings, and is thus more caring and communicative in one way, more egotistical and self-centred in another. From the first comes a heightened awareness of issues of justice and equality; from the second, given the growing stress of competition for jobs, a move in the opposite direction. It is the first generation for whom television has been a major formative influence. It is less provincial and more sophisticated, on the whole, than earlier generations, and it has a broader range of skills and knowledge. At the same time it is less inclined to work and behave in particular ways simply because those are the accepted ways (SPTG, 1981a).

Because of their numbers, members of this generation will be a dominant factor in the formation of public opinion well into the next century. Although it will change as they grow older, their outlook is sufficiently unique and strongly defined to presage changes in many aspects of life.

Another cultural trend will be of significance: the increasing heterogeneity of the Ontario population. Figures show that from 1961 to 1980 there has been an increase in the numbers of immigrants to Ontario whose mother tongue was neither French nor English, from 12.4 per cent to 29.3 per cent (Ontario Ministry of Citizenship and Culture, 1982a). Between 1976 and 1981, the proportion of the total Ontario population whose mother tongue was neither English nor French has grown from 16.3 to 20.5 per cent (Ontario Ministry of Citizenship and Culture, 1982b). The results of this influx have been especially noticeable in urban centres: in Toronto, for example, in 1974 the dominant English-speaking cultural base was in a 47 per cent minority of the population, the majority being composed of some fifty other cultural groups (Toronto Board of Education, 1975). The same proportionate tendency will not be nearly as obvious away from large urban centres, but the trend towards heterogeneity is unlikely to abate.

In effect, we are becoming a culture of minorities. The role of the publicly funded education system in answering the needs of particular groups without sacrificing its responsibility to the whole of Ontario society will be crucial in the next five to ten years.

2.2 Changing Social Institutions

Over the next ten or fifteen years, no new family form will emerge in any strength, but the distribution of forms will change. The nuclear family--husband, wife, and children--will not disappear, but increasing divorce rates (perhaps as many as one in every two marriages) will challenge its predominance. Single-parent families and families of remarriages will occur almost as frequently.

However, it is likely that the nature of the nuclear family will change. The birth rate is falling; fewer families will have children and those that do will have fewer. When it does occur, childbearing will likely be postponed: only half as many women 24-29 currently bear children as did in 1960. In a majority of families, both parents will be employed outside the home. Since 1975 there has been a significant increase in the proportion of working mothers with at least one child under 15: from 48 per cent (1975) to 56.5 per cent (1982). The greatest increase has occurred in the number of working mothers with one child under 3: from 36.6 per cent in 1975 to 51.6 per cent in 1982 (Ontario Ministry of Labour, 1982). Consequently, even children who do grow up in traditional families will spend a lot less time with their parents than children previously in this century have done. As one result, pressures on various levels of government for more daycare provisions will increase. At the same time, in light of its commitment to the family as the primary source of nurture for the young, government will be challenged to find new ways of supporting parents so that childhood does not become, as it were, institutionalized.

All this suggests that there will be some powerful effects on the emotional tenor of children's lives. If domestic affiliations become changeable for many, the school system might find itself called

upon to provide children with coping skills of a very primary kind. Clearly, there will be an increasing call on all social institutions to provide new forms of emotional and physical support. For the education system, this will have special implications for the universities in the training of teachers, for the community colleges in the provision of parenting and early childhood education courses, and for the ministries and local boards in curriculum development.

The trend towards an increase in single-parent families is a special case. Many are headed by women with low average earnings. Education, specifically skills training, could help them escape being dependent on the forms of social support many of them need. But for them to be able to take advantage of further education requires that they be supported while it is being acquired and, further, that services such as daycare continue to be available to them so that they can take advantage of their education and work.

2.3 Changing Work Roles

The trends are well known. By 2000, it is expected that in Canada manufacturing jobs and jobs related to agriculture will have declined to under 20 per cent of the work force. The remaining 80 per cent or more of jobs will be in the service sector, jobs such as computer programmers, draftsmen, waiters, lawyers, teachers, flight attendants, data processers, librarians. Of these, at least half will be concerned with information collection, management, and dissemination. Unemployment rates will continue to be high. The rate of 3 per cent which was set in 1964 by the Economic Council of Canada as "a realistic objective" has rarely been met and perhaps it never will be (Canada Department of Employment and Immigration, 1981). Current federal budget papers project an average rate of 10.6 per cent for 1983 to 1987, which is, by some, seen as being too low (Canada Department of Employment and Immigration, 1983). Economic growth, in conventional terms, will no longer take up the slack in unemployment. At the same time jobs exist, and will be created, for which no one has the right training; in the nature of things, by the time programs are established and people trained, these jobs will often no longer exist. Driven by

developing technologies and a doubtful economic future, changeableness, limitation, and instability will characterize the world of work of the future.

Striking changes in the composition of the work force will occur. In the first place, it will age, partly on account of the movement of the baby-boom generation through it, partly because of a reversal in the trend to early retirement (the latter as the result of the removal of mandatory retirement, a slowdown in functional aging, and a lessening of real income). By 1990, over 75 per cent of women aged 24 to 54 will be in the labour force, though there will be decreased opportunities for them in traditional female occupations. There will be an actual decline in the number of workers aged 18-24; the pool of highly qualified and highly skilled youth is expected to decline. Each of these changes in labour-force composition creates new training and learning needs (Canada Department of Employment and Immigration, 1983).

Of particular concern to the ministries in the near future will be the problem of youth unemployment. This will operate across the range of skills, from the least to the most qualified. It is estimated that, in Canada, at least 15,000 post-secondary graduates each year--over 10 per cent of the graduating class--will not find jobs. Or not at their level. However, at the same time, the need for highly qualified manpower is expected to greatly exceed the supply, partly as a result of aging: at present, 10 per cent of Canadian researchers are over 60, 28 per cent are over 55, and 43 per cent are over 50 (Canada Department of Employment and Immigration, 1983). The effect of this will be to create a pool of well educated but frustrated people, the more cynical to the extent that they will have pursued their education in the belief of its usefulness as a career preparation. Nonetheless, most of these people will be able, by virture of their preparation, to get or create for themselves work of some kind.

More needing support because less able to protect themselves, will be the increasing numbers who will leave school to look for work too early to have acquired the skills to adapt. Adaptation not only to

new jobs and skill requirements but to new definitions of work itself will begin to be necessary. As the economy moves into a period of little or no growth and loses its ability to absorb each year's crop of graduates by creating new jobs for them, there will be a trend on one hand towards intense competition for what few jobs there may be, and on the other toward more flexible ways of arranging work. These will take the form of job sharing, self-employment or entrepreneurship, and regular education leave programs, for example. And this loosening of the strict, industrial-era relationship between employment and self-image will be helped by another trend: the gradual dissociation of wealth from intensity and duration of labour. As we move through the end of the industrial era, the classic moral imperative of this relationship between employment and self-image, the work ethic, will come to seem less relevant to an economy based on service activities, of which the most predominant will be information handling. In this ethos, industrial models for defining productivity will not apply.

In concluding this section, the question arises: Where does this leave education in Ontario? On one hand, some might think, it leaves us facing the unimaginable. On the other hand, perhaps, it invites us to consider that the informed imagination may be an appropriate guide as we try to devise an education for the future. The changes outlined here are, after all, only the products of an interaction between human ingenuity and previous changes, each conditioned by and conditioning the other. What would be truly unimaginable would be an unwillingness to use the only inexhaustible resource we have as we move ahead--our human minds.

3. BELIEFS AND ATTITUDES AFFECTING EDUCATION IN ONTARIO

In the first two chapters of Part I, we outlined in broad terms some of the altered or altering circumstances which will affect Ontario's social and economic organization and education in the fairly near future. But what societies believe or think important also affects behaviour, and in this chapter we attempt to describe those beliefs and attitudes which are currently affecting, and will continue to affect, Ontario education.

From its inception to the present, the public education system in Ontario has been sustained because of a general belief that it is a public good. Its founder, Egerton Ryerson, like other nineteenth-century social ameliorators, felt this to be true for several reasons. It would help preserve good government and constitutional liberty, since an educated populace could make informed and rational political choices. It would ensure a degree of social cohesion by virtue of being compulsory, universal, and free. By being practical, it would prepare its graduates for lives that would be useful both to themselves and to society, and by dispelling ignorance, it would help reduce the individual and social ills of poverty and crime (Wilson, 1970). While we might not justify the system in precisely these terms today, still a core of belief in the public utility of publicly supported education is a constant that has survived since the 1840s.

Another belief which has not diminished in strength since Ryerson's day is that the Ontario system of publicly funded education should draw on the best practice from other jurisdictions around the world to achieve its own unique excellence. For Ryerson, who was given the job of creating an education system virtually out of nothing, this meant that his first task was to set out on a fourteen month tour to examine educational systems in other countries. In effect he learned what was best from a variety of sources, and these best practices, adapted to the special conditions of Ontario society of the day, became

the basis of the Ontario system. As the system has grown, this openness to ideas from other jurisdictions, or lack of provincialism, has been a characteristic of education in Ontario. At the same time, other jurisdictions have found much to admire in the Ontario system, which suggests that we have not merely been copyists but originators in our own right.

One of the reasons that publicly supported education has in general continued to be accepted as a public good is that it has been seen to exercise a certain kind of public or social responsibility. Broadly speaking, education--both formal and informal--is the means by which a society recreates itself; that is, recreates the knowledge, skills, habits, and customs which are the characteristic components of its group or social life (Dewey, 1955). Thus public education, by ensuring the transmission of these cultural artefacts from generation to generation, helps give the society shape and integrity, and assures that all members of the society become participants. For the individual, to learn is thus to participate in society's learning about, and re-creation of, itself.

The concern for societal safety, however, can have an undesirable tendency if it leads to a narrow, monolithic view of what culture is all about. Like any single-minded promotion of homogeneity and uniformity it occurs at the expense of the particular, the individual. Since the end of World War II, though, and especially in the 1960s, this tendency has been greatly undermined. Such factors as succeeding waves of immigration, an expanding economy, and a growing literature in psychology which recognizes individual differences, have legitimized the idea of individuality in Ontario society. And as the previous section demonstrated, this trend will continue. In fact it could be argued that cultural diversity or pluralism, which is no more than a social way of recognizing the significance of the individual, is indispensible to social and economic progress and change.

Today, the trend to the recognition of individual needs and to cultural pluralism has led the public education system to various forms of accommodation. These can be seen in the establishment of

alternate schools within public boards, in the proliferation of heritage language programs, in the development of special education, and in the last fifty years of officially sponsored curriculum reform in Ontario. In effect, the principle that the needs of individuals and communities of interest should be met by the public education system now has the force of being a general public expectation. It is a trend that will not likely reverse.

It has its dangers of course. In excess, individualism can lead to fragmentation and the shredding of the social fabric, the sacrifice of the common good for the good of individuals or small interest groups. Therefore, the challenge in developing criteria to discern which educational services should be provided for whom and in what form is--and will be--to develop criteria which allow for a fruitful tension between safety and diversity, between conserving those aspects of a culture which are necessary for a coherent social life and welcoming those forces of individuality or even idiosyncracy by which a culture refreshes and develops itself.

With respect to Ontario's long-standing beliefs in quality education and equality of educational opportunity, a shift in emphasis appears to be occurring. Since the Second World War, these have been among the most persistent criteria in judging the well-being of public education systems; indeed they were implicitly present during the nineteenth century in the public school movement. It is interesting, and not coincidental, that changing definitions of these concepts have reflected the shifting tension between uniformity and diversity we have just described. For example, after World War II, as Coleman in his text High School Achievement has observed,

> educational quality was judged in terms of inputs into the system in the form of staff, physical plant, curriculum guidelines, etc. The idea was to create a common experience through equal inputs. Equality was judged in terms of access to these inputs, to this common experience. However by the middle of the 1960's the individual rather than the system became the focus for evaluating quality and equality. Quality of a school system was judged by

how well its graduates performed on tests and in the job market (Coleman, 1982).

Equality too came to be associated with individuality. The issue became not whether all students had access to a shared experience but whether they were able to realize their individual potentials in the school system. The tracking system symbolically represents both the good and bad manifestations of this philosophy. In the 1980s and beyond, the challenge in both quality and equality will be the same as that for developing criteria for educational well-being in general, to achieve a fruitful tension between the individual's need for fulfilment and the state's need to promote a common life along with progress and diversity.

It is important to recognize that the proliferation of learning needs, along with the recognition of the interests of subgroups and individuals, marks the maturation of Ontario society. It must also be recognized, however, that demands that are now being made on the education system are more sophisticated and diverse than ever before. Fortunately, along with the sophistication of demands there is a developing sophistication of means of educational service delivery. These will permit the development of new organizational forms, as well as of new techniques and technologies, which will be better able to meet the demands that will arise. They will stand in new ways as mediating structures between a massive, complex society, and the individual who must cope with it in order to survive and be successful.

Interestingly enough, however, there is nothing new about our ability in Ontario to take advantage of appropriate technology. Essential to Ryerson's success in creating the Ontario education system was his mastery of the technology of the day. A common form of information access and dissemination was travel: Ryerson travelled first to America and Europe to gain the information he needed about other systems, and then five times throughout the province to hold public meetings and conferences with trustees, inspectors, and teachers. In this way he was able to effect changes in public opinion so as to ensure, for example, that when his principle of free schools

was made compulsory in 1871 there was little opposition. He made use of the postal system: he published a monthly Journal of Education which was sent to school boards throughout the province, and his office correspondence averaged six hundred letters a month. And he put in place a technology of standardization and accountability: he acquired the rights to republish a set of graded, patriotic, non-denominational, inexpensive textbooks, and he established a system of supervision and inspection (SPTG, 1983b).

Ontario's belief in its ability to use appropriate technology with respect to education has not altered. Currently a variety of initiatives are underway which reflect that belief. These range from exploring the delivery of education to remote areas via satellite, to electronically linking together boards of education; from funding the development of sound educational software, to making possible the development of the most sophisticated educational microcomputer on the market today--the ICON. This latter initiative, a co-operative endeavour among the academic, public, and private sectors, is a prime example of appropriate technology at its best. The belief in our ability appears well founded.

In conclusion, the conditions and beliefs outlined in the previous two chapters are designed to form a background against which future options and implications for education in Ontario can be discussed. It is to these that we now turn.

PART II – STRATEGIC OPTIONS AND POLICY CONSIDERATIONS

In this section of the report we describe a number of strategic options and policy considerations available to the ministries in light of the conditions and beliefs outlined earlier. These options and considerations are put forward under the following headings:

a) Learners and Learning
b) Curriculum and Teaching
c) Service Delivery and Governance

4. LEARNERS AND LEARNING

4.1 Introduction

People learn because it is their nature to do so. From a biological perspective, learning is, most basically, an adaptive behaviour (Sheldrake, 1982). From the moment of birth, the child--like any organism--finds itself in an environment with which it must interact in order to survive. It must do this whether the environment is hostile or friendly or the usual mixture of the two. In its broadest sense, learning is simply this interaction, the result being that the organism, the learner, assimilates information about the environment and, in so doing changes. From the learner's point of view, this interaction is an ordering and organizing activity, combining the action of perception (about which we know a little) and concept formation (about which we know very little). So learning is the achievement of a kind of mastery of the environment by assimilating and ordering information about it. Some would call this process the making of meaning. It is this human ability to learn that, more than any other, allows us to survive. To the extent that learning is change, it is what allows us to survive the changes around us. It follows therefore that in a time of increasing and complex change, the ministries must conceive their essential mandate to be the support of the key adaptive human quality--the ability to learn. This implies that the ministries must make as great--if not a greater--commitment to the processes of learning as to the definition of specific subject matter. This would involve the ministries in activities such as constantly monitoring research related to the development of the brain and should commit us to overtly reflecting those findings which appear to be valid in the structure of the curriculum.

4.2 The Need for Government Organizations To Adapt

Like people, organizations (in a metaphorical sense) must "learn" in order to survive. Like people, too, to learn successfully depends on

the ability to assimilate information and order it appropriately. As the environment changes over the next two decades, organizations will have to change too, or risk becoming irrelevant in the eyes of the public. Thus, proposals for change in an organization must be assessed in terms of whether they improve the ability of the organization to change and adapt.

4.3 Refinements of Learning Theory

Even a synthetic theory of learning that recognizes the role of both nurture and nature must also recognize that the learning process, far from being mechanical, contains many idiosyncracies and irregularities. These can be classified into two categories: individual differences, and developmental irregularities which characterize humans as a race. From the study of these sources of irregularity and idiosyncracy comes a great deal of justification for the modern movement towards individualized instruction.

For example, with respect to human beings as a race, recent brain research has taught us that the human brain, far from being a homogeneous mass, is divided into two halves or hemispheres each of which specializes in doing a certain type of thinking or learning. The left half is analytic and verbal while the right half is creative and recognizes forms, shapes, and colours (Sperry, 1964). Why this differentiation occurs we do not know, but since each kind of thinking is adaptive in different ways good education practice would promote development of both sides rather than only the left side upon which our educational institutions tend to concentrate at present. Another example of this kind of irregularity has to do with studies on the rate of brain growth. Until maturity at the age of 16+ years the brain grows not regularly but in spurts during the periods 2-4, 6-8, 10-12+ and 14-16+ years of age (Epstein, 1973). Further research upon such periodicity indicates that individuals may grasp new facts and concepts more easily during these stages (Toepfer, 1981), and if this research proves valid, significant implications for curriculum development and teaching practice follow. Also, as the work of Piaget, Bloom, and others has shown, the most critical years for individual development

are the years from birth to six, a period during which all living really is learning. These initial periods have obvious and profound implications for ordering instruction in the schools.

Inequalities between individuals also have profound implications for instruction. Benjamin Bloom has observed, for example, that the slowest 5 per cent of all learners take five times as long to master a learning task as do the fastest 5 per cent, yet classes are still geared largely towards the "average" learner (Bloom, 1964). There exist differences between individuals also with respect to learning styles which promote or inhibit accomplishment. Factors such as persistence, anxiety, and tolerance of frustration mark individual learners as do physiological differences like sex, health, time of day, the need for mobility, and environmental demands like sound, light, and temperature.

These differences suggest generally that we should be tailoring instructional conditions for different learners in order to optimize their strengths and to minimize and/or overcome their weaknesses. The adult learner movement at OISE explicitly recognizes those differences and highlights them in a learner-centred theory of instruction.

Learner-centred, as opposed to teacher-centred or curriculum/society-centred instructional theory has been with us for some time though. It is a desirable and necessary corrective to theories that centred on other factors and things, like all correctives, but runs the risk of going too far in the opposite direction.

Finally, there has been a recent development in learning theory which also has implications for curriculum development of a slightly different sort. This theory, developed by Gardner in his text Frames of Mind: The Theory of Multiple Intelligences, argues that there exist in human beings a number of discrete intellectual domains, or intelligences, and that learning is entailed in developing them. Six such intelligences are described: linguistic, musical, logical

mathematical, spatial, bodily-kinaesthetic, and personal (Gardner, 1983).

The theory argues, moreover, that though all normal humans have rudiments of all of these intelligences there are great differences with respect to which intelligences can be highly developed by any given individual. The theory observes, moreover, that the present education system is geared primarily to the development of only linguistic and logical mathematical intelligence. Therefore, it follows that a great deal of human learning potential is ignored by our curriculum, and the ministries should begin to design curriculum to reflect all types of human intelligence. Such curriculum development should be based upon explicitly stated learning theories appropriate to the learning task and form of intelligence being addressed.

4.4 Who Will the Learners Be?

Over the next decade, the traditional school age population will decline. At the same time, however, the Ontario population as a whole will continue to grow. And there are signs that the boundaries which defined the traditional years of schooling--ages 5 to 18--are breaking down under the pressures of various needs. Some boards, for example, are beginning to take a position of assuming some responsibility for childcare; as well, the needs of adults for continuing education or retraining are evident in their increasing returns to universities, community colleges, secondary schools, or private institutions.

Given these factors, the ministries have perhaps two options. Either they adapt to a smaller traditional school population or they look for opportunities to take initiatives made possible by an expanded population profile.

If the latter option is chosen the ministries will need to refine their ability to accurately and quickly identify what clients have what needs. They must maintain images of who their clients are currently and who they will be in the future. To do so, the following

are among the factors on which a watching brief must be maintained: birthrates, changing age structures, labour force participation rates, employment patterns by industry, unemployment rates, rates of marital breakdown, ethnicity, and the language spoken in the home.

In addition, the ministries should create a mechanism to enable them to rapidly get a picture of their actual and potential clients in terms of their numbers and special learning needs and characteristics. These pictures, or characterologies, must not be static but able to evolve to accurately describe the changing needs of changing client groups. The purpose of such characterologies would be to provide a means of testing policy proposals to ensure their appropriateness and adequacy.

4.5 Learning and the Labour Market

There is currently a debate over how closely the education system should be tied to the labour market. Should educational institutions --at every level--provide specific job skills or skills that will help in a range of jobs? If so, to what extent? The need for the debate to be resolved is sharpened by two factors: increasing youth unemployment, and the increasing effects of technological change on the work place.

While schools, colleges, or universities in fact teach generic skills that help graduates find jobs, the extent to which these skills should be closely oriented to the specific requirements of specific occupations is a moot point. Given the complexity of the job market, rapid changes in job requirements, and the time lag between perceiving the need for a skill and producing graduates with that skill, the latter enterprise is often unsuccessful. Even attempts to improve information gathering systems so that predictions of labour market needs may be more accurate and timely, while legitimate, have not so far been particularly successful.

To the extent that the education system describes itself as preparing students for the world of work in narrow, job-specific terms, it runs the risk of losing public support, to the extent that the

description is seen to be untrue. Students who--at any level--complete their schooling believing that mastery of specific subject matters will enable them to get jobs will, not surprisingly, feel angry and betrayed when they find no jobs waiting for them.

The answer, for the ministries, would seem to lie in the area of general learning skills and in avoiding polarization between general education and career or job preparation. Chickering, for example, in his article "Education, Work and Human Development", has shown that the amount of information a student acquires in a specific content area is generally not related to superior performance in an occupation--often it is not related to even marginally acceptable performance. Instead, the most telling factor seems to be the cognitive skills that are developed and exercised in the process of acquiring and using knowledge. Chickering identifies four essential cognitive skills:

- information processing skills, related to learning, recall, and forgetting;

- conceptualizing skills which enable individuals to bring order to information;

- the ability to understand the several sides of a controversial issue;

- the ability to translate observation from experience into a theory that can be used to generate behavioural alternatives. (Chickering, 1981).

If these skills are valid, they suggest that a future of unstable employment can best be prepared for by, first, training learners how to learn, how to make use of information, and then, on this basis, orienting them to specific, job-related skills.

To the extent that this could be done successfully, an effect on learners' attitudes would already be achieved. But thought should be given, in any case, to incorporating affective objectives in

programs that could motivate learners to learn for a future of work sharing, for example, or alternating periods of work and training, or even alternating periods of work and no work. To help learners see advantages to themselves in these kinds of futures will be to help them acquire the flexibility they need to cope with change.

Thus three options present themselves:

- If the ministries agree that the best preparation for and means of coping with change is the ability to learn, curricula should be developed so that skill is enhanced in order that individuals come to understand their own learning processes and are able to strengthen weak areas within them.

- The content of general education, both cognitively and affectively, should address the need for learners to acquire generic skills common to most jobs or to large sectors of the job market, and to develop adaptable and flexible attitudes as a basis for effective problem solving.

- Work should continue on improving information systems designed to assist guidance counsellors, who are largely responsible for preparing learners in the education system for entry into the labour market, to keep up to date with labour market requirements, emerging technologies, and training opportunities.

5. CURRICULUM AND TEACHING

5.1 Introduction

In its 1982 discussion paper, Curriculum Policy: Review--Development --Implementation (CRDI), the Ministry of Education set out its ideas about the processes of curriculum review, development, and implementation, and outlined an operational model by which these processes could be carried out. For our purposes, a notable feature of this process is the review phase, the purpose of which is "to gather information that can be used in making decisions to facilitate progress towards the achievement of educational goals." Among the kinds of information to be sought is that concerning "the educational, social and political trends in the province." The assumption seems to be, here at any rate, that a curriculum which best serves the interests of students is one which accurately reflects the conditions of the society in which they live.

This is not a new idea, but it is a very important one. It is, moreover, congenial to the purposes of this paper, which are to bring certain informed speculations about future trends along with a review of the beliefs and attitudes that have shaped Ontario education in the past into a relationship that will be useful in planning for the future. Clearly the review, development, and implementation of curriculum must be at the heart of such planning.

The CRDI document deals, of course, with curriculum renewal in the elementary and secondary schools of the province. It is at least arguable that some of its general principles, such as the one noted above, apply equally to post-secondary and continuing education, and that government has a policy role to play in the process of curriculum development in these areas as well. For example, Ontario universities have been virtually autonomous with respect to curriculum delivery, although government has recently, through financing and program approval procedures, impinged somewhat upon the context within

which curriculum decisions are made. With regard to the colleges, there has also been, recently, a redefinition of government responsibilities expressed as a commitment to the development of guidelines on competencies. This will likely result in a perception in the colleges that curriculum responsibilities are being centralized; however, the colleges will continue to develop detailed curricula for their programs, but with the help of a framework of terminal competencies agreed upon by potential employers of graduates. And, of course, for elementary and secondary education, the ministry formulates the broad goals of education, specifies major objectives and expectations, and prepares curriculum guidelines which provide the basis for common learning activities and core content; school boards design programs of study that are consistent with provincial curriculum guidelines and, at the same time, accommodate local interests and needs. The point is that, in spite of this variety of centralizing and decentralizing tendencies, leadership responsibility in curriculum matters effectively rests with the government. Any significant move, in any direction, could quickly be seen as a preference for one set of priorities over another.

In what follows, we will argue for more explicit linkages between curriculum development and social renewal, for a rethinking of the balance among curriculum objectives, and for the development of new forms of support for teachers and the teaching process. Our arguments are based on the needs that are being created by the conditions outlined in Part I of this report. Throughout the report, but especially in this chapter, we are guided by the principle that, in an era of rapid and incessant change, the form in which a society negotiates its vision of the future is the starting point for educational decisions. As Erik Erikson observed, in Childhood and Society (1950):

> The traditional sources of identity strength--economic, racial, national, religious, and occupational--are all in the process of allying themselves with a new world image in which the vision of an anticipated future....will take over much of the power of tradition.

5.2 Curriculum Development and Social Renewal

In the previous chapter, we suggested that learning is basically an adaptive process, the achievement of a kind of mastery of the environment by assimilating and ordering information about it, the making of meaning. To this, the idea of curriculum is a natural complement. Essentially it is a vehicle by which key elements of a learner's culture or environment may be distilled and structured so that the learner's natural tendency to learn may be optimized. In this broad sense, curriculum moderates the precariousness of unguided learning, and by doing so helps ensure both the individual's and society's survival. In these terms, then, curriculum development must be at the very heart of any attempt to promote a dynamic and viable relation between individual and social well-being.

Even during the most stable of times, curriculum development and renewal are problematic enterprises. In general, they require a mastery of two quite different kinds of practical decision making. First, they require discrimination: the ability to choose from a seemingly infinite array of curricular candidates those which are most relevant for promoting both individual and societal purposes. In this sense, the choosing of curricular items provides a forum for society to negotiate the images of the future it wishes for itself and its children; in other words, it is a means by which society undertakes its own renewal. Second, curriculum development must be well grounded in practice; that is, it requires practical and particular decision-making which is sensitive to the needs of the various learners it is intended to serve, and to the requirements of the various settings in which it will be implemented. In this sense, curriculum development is the prerequisite of all that follows in education--including matters of program, structure, and finance.

However, during periods of rapid change like the present, where adaptation to change requires great flexibility, curriculum development is even more problematic. In the first place, the choice of curricular items is made more difficult by the lack of any generally accepted sense of social direction or by the existence of several

competing ones. At the same time, our current curricula are already highly developed and have, therefore, a life of their own. They are already burdened, on one hand, by the demands of the work place, of large parts of the social agenda, and of a constant state of flux in most subject areas caused largely by our rapidly increasing store of information; on the other hand, they must carry the weight of the structural rigidities of the mature education system itself. Moreover, for various pedagogical or social reasons, the relevance of much of what is now in place is coming increasingly into question.

The traditional way of thinking of curriculum in Ontario, in subject-centred terms, is not altogether helpful in resolving these problems. However, it is so firmly embedded that, if for no other reason, it must be taken into account. Basically it derives from the ancient assumption that all knowledge forms a learnable whole which, for the purposes of instruction, may be divided into parts. Thus curriculum is focussed on content, and content is defined in terms of particular subject matter, or particular things to be learned. The subject-centred curriculum has a strong orientation to the past, since what is to be learned is thought of as being that which has been established as essential to know. It tends to require students to be passive, to take in what it is determined they should learn. Excellence in curriculum practice is measured in tangible ways by the quality of teacher training, curriculum guidelines, and classroom resources, and by the attainment of knowledge by students. Broadly speaking, this description of the subject-centred curriculum is true for schools, colleges, and universities, though perhaps not so true for the lower grades of elementary schools.

For contrast, we might cite what could be called a process-oriented conception of curriculum. It is not new either; its roots may be found at least as far back as the sixteenth century and in the writings of educational reformers such as Comenius (Jackson, 1983). Its basic focus is on the learning processes of individual students, not on the content of what must be learned (though that is not ignored). It may be summarized, in comparative terms, as follows:

> To imposition from above is opposed expression and cultivation of individuality; to external discipline is opposed free activity; to learning from texts and teachers, learning from experience; to acquisition of isolated skills and techniques by drill, is opposed acquisition of them as means of attaining ends which make direct vital appeal....to static aims and materials is opposed acquaintance with a changing world (Dewey, 1938).

Though the comparision may be somewhat overstated, it is clear that the process-centred curriculum, while not denying the past, is more oriented to the future. Excellence can be measured in the same tangible ways as in the subject-centred curriculum, but also by less tangible ways, such as, for example, by evidence of growing maturity, independence, and the ability of students to direct their learning.

These two perspectives are more easily reconciled than the terms of their comparison might suggest, and the trend is toward doing so. To the extent that this is so, the possibilities for change in the curriculum would seem to be enhanced. For one thing, the "hidden" curriculum--the diverse social or affective goals and expectations for education--begins to emerge, and therefore to become available for public discussion. Consequently, discussion about educational aims and objectives has the opportunity of shifting from sterile debate about particularities of subject content to engage broader issues of individual and social well-being. For another, the need to devise curricula which are more truly strategic, in that they are adapted to the rapidly changing conditions of our lives and therefore able to help learners themselves become adaptable, seems more likely to be met.

One of the reasons that the subject-centred curriculum has had so long a life, and that the hidden curriculum has been able to stay hidden, is that there has been a fairly wide consensus in Ontario about the nature of education and the direction it should pursue. In effect, education was to conserve the culture and heritage (about which there was relatively little debate), socialize the young, advance individuals in the social structure, protect children from dangerous influences, select elites, support the economy through manpower

training (and political life through patriotic teaching), and to do all this while teaching basic reading, writing, and arithemetic skills, and the common knowledge and values of a reasonably cohesive society (Henchey, 1982).

Although, in very general terms, there may be agreement about the validity of these purposes, we do not now live in an era in which most people would understand each of them in the same way, or agree to their specifics. Our society has become pluralistic to a degree which, even a generation ago, few would have thought possible. This pluralism has rendered the social mandate of the education system ambiguous, and its goals amorphous. Each sub-element within the pluralistic whole does, however, have particular goals which it seeks to promote in competition with other interest groups. The failure of education to respond clearly to the particular agenda of any one of these groups means that all are disillusioned and therefore critical--to the point, perhaps, of concluding that the public education system is not able to bear all the hopes and expectations of a modern society (Henchey, 1982).

To this basic element in the public perception can be added a range of negative influences related to the effects of declining enrolment: the closing of neighbourhood schools, the redundant teachers, the insecurity and low morale of those remaining, the lack of continuity. Add to this the growing realization that education no longer guarantees social mobility (since, for example, post-secondary education no longer assures employment), that post-secondary entrance requirements are tightening, and that for the 70 per cent of those entering grade nine who do not go on to postsecondary education employment prospects are bleak, and we have a situation in which the general climate of opinion has become in itself an issue of major importance.

To a large extent (perhaps ultimately), the problem of public opinion is a problem of curriculum. The evidence for this is in the tendency of many people, when they are dissatisfied with the schools or anxious about "standards", to suggest curricular remedies. "The

schools should prepare students better for work." "Schools should not be so permissive." "There are too many frills in education." The subtext is almost always, "Things were better in my day," and the cure in usually to constrict goals, simplify the curriculum to a "core" of the 3R's, discipline, and career preparation, and re-impose province-wide exams for Grade 13. In effect this is a retreat from the future into a largely imaginary past, a retreat that may be understandable enough, under the circumstances. But education, and therefore curriculum, is by nature concerned with the future. And the way for it actually to be so is through a recurrent, public process of curriculum renewal.

Perhaps because of the past consensus about the purposes of education referred to earlier, there has not developed in Ontario a strong tradition of public debate about curricular goals and objectives. This is not to say that the education system has been insensitive to public needs, only that no formal means have been developed by which goals for the curriculum that are meaningful to all groups might be articulated. To do so would have significant advantages (and some risks, of course), yet it is an option we recommend, for by moving curricular issues more fully into the public domain, the public's educational consciousness would be raised. The various social, affective, and values concerns of the "hidden curriculum" would become explicit and therefore susceptible to public negotiation. Public concerns about the costs of education, which often conceal a fear about the adequacy of educational value, would be placed in an educationally appropriate context. The interests of special groups in society would be expressed in a public forum and would therefore be subject to full public sanction. And the public would have the opportunity to inform itself about issues of the future, to negotiate desired images of the future, and contribute to the development of curricula which would appropriately prepare students for the future.

We end this section with a caution. Curriculum planning, because of the complexity and because of the range of its consequences, needs to guard against the application of simplistic models. It is a

deliberative and iterative process which should permit a variety of models to come into play. For this reason, it is worth repeating that we are not wed, in this report, to any single fixed scenario for the future. What we advocate is rather a mode of thinking that recognizes the strategic potential of issues and that may lead constructively and responsibly to the formation of policy options, perhaps even to the development of strategic plans.

5.3 Curriculum, Technology, and the Teacher

The entire process of curriculum review, development, and implementation does not, of course, occur in a vacuum. At a fundamental level it is inherently part of the interaction between the learner and the thing learned, and critical to this interaction is the teacher. And when the future role of the teacher is considered, we feel that it in this area that the most dramatic change in education is likely to occur. This change will come about primarily as a result of the new microtechnology presently being introduced into the home, lecture hall, and classroom. The effects of this technology are already beginning to be felt, and in education, a major effect is seen in the growing awareness of a distinction between the terms "teaching" and "training". We feel the distinction is an important one.

A fair amount of confusion exists between the terms "teaching" and "training" (SPTG, 1983a). In most educational publications--training journals are an exception--the terms are used indiscriminately, with "teaching" often including "training" components. For the purposes of this discussion, it is appropriate to argue that the distinction between them be maintained, especially given the curricular perspective being explored in this report.

When training is being done, there is always a knowledgeable source being appealed to, whether it be a technique described in a book, a model outlined in a film or videotape, or an actual demonstration by a person. Training takes many forms: from mastering a method to tie a shoelace to learning a legible writing script to

achieving competence in driving a car. Explicit or implicit in any training is an objective to be met, an objective that is usually demonstrable in the short or long term. In addition, training appears to involve the mastery of a series of sequential steps, a "knowledge ladder", so to speak. If the steps are too far apart, if the gaps are too wide to be bridged, the learner is blocked and the objective cannot be met. The trainer must then bridge the gap with smaller, more easily comprehensible steps, in order for learning to proceed.

Teaching proceeds somewhat differently. A clue to this difference lies in the roots of the verb "to teach", the Old English words taecan (show) and tacn (sign). Teaching has to do with direction, with "signing the way"; its major techniques reside in the realm of questions, analogies, and parables. The learning objective is often hidden or unstated; the journey, not the place being travelled to, is the important thing. Great teachers, Socrates for example, have always allowed their students to draw their own conclusions, to question and probe deeply into how those conclusions were arrived at, and to justify, to themselves, that those conclusions were the correct ones. No models were put forward to be rigidly adhered to; relationships between things, rather than knowledge of things, was all important. If there was a goal at all, it was to achieve that flash of insight that lead to greater self-knowledge.

Such teaching might be thought of as very rare, yet unless one has had a completely abysmal journey through the education system, it is relatively easy to recall experiences of teaching in this sense. The effect of a piece of poetry beautifully read, the grasping for the first time of a law in physics that made personal sense, the completion of a paragraph one knows makes the point although every rule in paragraph construction may have been tossed aside, under the eye of an approving teacher--these are some of the experiences that can occur. And, unlike a training situation, a teaching situation involves learning for both teacher and student. With no other object in mind other than signing the way, the place reached may delight and surprise teacher and student alike, to the benefit of both.

It is in the area of training, however, that we believe microtechnology, particularly educational software, can and will make a significant contribution. The outline of a successful model to follow, the concept of a demonstrable objective, the step-by-step nature of the training process--all these are ideally suited to computer software. Indeed, given such things as vivid colour, sophisticated graphics, absorbing animation, and the ability to move backwards and forwards in sequence, it is arguable that such software may do more effectively what at present consumes a great deal of a teacher's time and effort.

At present, the amount of training teachers must do with their students is considerable, and much of it is necessary and worthwhile. Time must, however, be taken from teaching. But, the advent of microtechnology makes possible a re-ordering of the ratio between teaching and training. Computers are ideally suited to segmented learning tasks, to repetitive drill, to objective-driven training. Used this way, they could free teachers to teach. Certainly not all present teachers will have the skill and depth of the world's greatest teachers, but the skill and depth of the present teaching force is considerable, and if freed to some extent from the time-consuming nature of the training process, that skill and depth could have an opportunity to become far more visible than present practice allows.

Admittedly, research in this area is at present more suggestive than definitive. This should not surprise: there are simply too few microcomputers--and less educationally sound software--available for rigorous study and analysis. Nevertheless, studies such as the Queen's University LOGO Project (Burnett and Higginson, in progress) and The Impact of Microcomputers in Elementary Education (Larter, 1983) point out that the distinction between teaching and training is a valid one, and that the introduction of microcomputers into a classroom, if incorporated into daily curriculum, has the effect of altering the teacher's role from information giver--a trainer--to director of an educational process--a teacher.

This, of course raises many questions. For example: if the new technology will free teachers from the largely routine training tasks which, it is argued, occupy much of their time, will they already have the skills to take advantage of the new opportunities? What kinds of retraining or in-service support will be required to ensure that they do have the appropriate skills? And, looking away from teachers for a moment, how can educators guard against the tendency of the new technologies to institutionalize themselves (a tendency all technologies have), to develop purposes and criteria of quality which are derived from the nature of the technology rather than from the goals of the user (Goble, 1977)?

That we ask these questions must not be construed as a rejection of the new technologies. Nor do we believe that, like the epidiascope or overhead projector, they will simply gather dust in school storerooms after a brief period of enthusiastic and misapplied use. It is because we take seriously the powers and, as it were, the inevitability of the technologies that we ask these questions.

There are many more. The microcomputer is a medium of communication and, like any medium, affects its message. What might these effects be--on both teachers and learners? What will the effects be of the new technology on the larger educational contexts within which it will operate--the classroom, the college, the university, the whole education system itself? To work with electronic media is different than working with print media: what effects on the cognitive processes of learners will there be, not to mention their affective and intuitional processes? What new patterns of social interaction will emerge from the introduction of the new technologies? Will the microcomputer's ability to facilitate individualized mastery learning loosen traditional age-grade structures? Will teachers continue to be subject specialists, or will they become, as is largely the case at present in the elementary sector, subject generalists but learning specialists? If so, how?

And so on. The introduction of microcomputer into the education system, has already created a significant momentum. This is

not necessarily a bad thing, given that we can only really come to understand how to use new tools by using them. But we are at a point where the effects of this tool on curriculum, on teaching strategies and the teacher's role, and on teacher training must be studied.

Against this background--or perhaps foreground--teachers face many continuing difficulties. They must, as usual, find ways of interpreting the values of the community to their students even as those values become less cohesive and more diverse. They must learn to deal with different learning needs. They must learn to work within more varied and non-traditional settings, as well as differently within traditional ones. Because of the trend toward greater community involvement with schools at all levels, they must learn to work more closely with parents and other educational groups. And they will need to be aware of, and prepared to put into practice, new theories of learning, new learning styles.

All this occurs in a context, at present, of low teacher morale, caused partly by declining enrolment and the consequent lack of possibilities for movement both within and into the education system at all levels. Thus the major immediate needs seems to be for intensified programs of support and in-service training. However, because of the peculiar age structure of the profession, the coming generational turnover will be much larger and more rapid than usual. This large infusion of new blood, while it may create temporary problems of supply, will also produce opportunities to implement new methodologies and establish new attitudes which may not be repeated for many years. This will require, in light of the changing conditions that we have suggested, a rethinking and perhaps re-ordering of teacher education programs.

5.4 Curriculum: Future Directions

In earlier sections of the report we discussed the composition of the work force (section 2.3) and suggested the need for learners--the workers of the future--to acquire generic skills as well as to come to

understand their own learning processes (section 4.5). These needs are reinforced by studies of the effects of technology on the work place, many of which show that workers will need to be retrained at various points, either for different jobs, or for different patterns of work, such as work sharing, or part-time duties. In the next two sections we hope to show how a curriculum that can adequately prepare students for a changing work place is one that will adequately prepare them for changing lives.

In the previous section we suggested that the new technology in the classroom would permit greater mastery of subject content, and that it would allow for program individualization to a degree never before possible. Given such an acceleration in content mastery, the curriculum document Ontario Schools: Intermediate and Senior Divisions (OSIS) is both timely and well suited to a quickening in the rate at which material is learned. Also, the guideline approach to curriculum is congruent with an age in which specific items of content change rapidly as new knowledge is developed in various subject areas. Under these conditions, not only will teachers be more free to teach, learners will be free to learn more than content. What else may they learn?

A common thread running through most educational research is that a strong and positive personal identity is a psychological prerequisite for successful learning. This is, in a sense, independent of the ability to master content, although such an ability would undoubtedly enhance self-confidence. But there is more to it than this. A fostering of a positive sense of self requires a shift in focus away from the current emphasis on content to such things as the quality of the classroom experience, the quality of the learning experience, and the quality of interactions between student and teacher and student and student. Such a shift implies a reduction in reliance on learning skills related specifically to the mastery of content (most of which depend on linear logic and analytical thinking) to a greater emphasis on learning skills related to the affective domain, interpersonal skills, and the ability to synthesize material. Hence

the value of arts in curriculum, given the non-linear skills that they require, and their emphasis on experiential learning.

The issue of the proper role of the arts in education is always current, but because problems related to it seldom have drastic and immediate consequences, they are seldom satisfactorily resolved. The arts, evidently, are one of those important matters whose fate it is to be always displaced by the merely urgent. There are several reasons for this. On one hand, to many people arts are play and therefore should have no role in our schools, where learning should be a serious business. On the other hand, achievement in the arts is hard to measure, to quantify, and, to many people, learning that does not have a measurable outcome is not learning.

But there are many reasons to counter such attitudes. More than most "subjects", for example, the arts are concerned with doing; from an educational perspective, they require learners to do if they are to learn. It is, of course, possible to teach the arts as if they were specific items of content to be mastered: "What are the major characteristics of Rembrandt's style?" "Distinguish between the baroque and mannerist periods in music." "What have been the major contributions of Martha Graham to modern dance?" But it is worth remembering, in this context, that the Greek origin of our word 'poem' is the verb 'poieo' to make.

As well, the arts are quintessentially concerned with identity. As the Canadian Conference of the Arts suggests in a 1979 report: "Play initially, and the arts subsequently, are the major ways we adjust to the world when we are young....To create art is to state our personal identity....When (a learner) makes an artistic choice, he is showing his independence, his self-reliance, and his sense of personal autonomy." In the subsequent process of social growth, the arts, by increasing self-awareness, develop awareness of others. In the group arts in particular "personal relationships are strengthened and these in turn reinforce (the learner's) sense of self." Finally, since the arts reflect and are shaped by the culture from which they spring, the learner, through his involvement with them, "extends his

awareness into his immediate group, the local environment, his community, and his culture as a whole." Thus arts education speaks to the whole range of development of identity, from the individual, to the social and, ultimately, cultural. And without a strong, positive sense of identity, not only learning but also the ability to cope with change remains problematic.

But there are other equally significant benefits that accrue from arts education. As Courtney and Park suggest in their study, Learning Through the Arts (1980), significant learning factors are improved by arts programs, such as perception, awareness of the environment and relationships, concentration, uniqueness of thought style, expression, inventiveness and problem solving, confidence and sense of self-worth, and motivation. These learning factors are comprehensive and provide a countervailing balance to the emphasis on learning through language (especially written language) which has been the bias of schools since their inception. As such they can help schools meet the needs of the so-called "general" or "nonacademic" students for whom nonverbal forms of learning are particularly important. But, of course, the arts also facilitate those processes of verbal cognition and learning which the schools conventionally recognize as central to their purpose.

For all these reasons, we suggest that the arts be given a stronger, more explicit role in the curriculum for the future. We do not suggest that they replace subjects, or the need for mastery of content. Rather, on the assumption that content mastery will be more assured in the future, we see an opportunity for other kinds of learning to take place, which are essential if learners are to acquire the skills and attitudes they need to cope with change. Hence our suggestions have to do, primarily, with achieving a new balance in the curriculum. We suggest that the ministries should watch for indications of marked improvement in academic performance on the part of students, and once these have been detected, ensure through curriculum policy that a proper balance be maintained between the development of cognitive skills and affective skills, with the aim of improving a student's sense of worth being a constant behind both.

5.5 Curriculum and Values

A final issue germane to the future direction of curriculum development and implementation is the issue of "values" education. The importance of this issue is underscored in the Ministry of Education resource guide entitled Personal and Societal Values (1983), where the following statement is found:

> Values messages are transmitted to students not only through the organization and operation of the school as a social system but also through the nature of the program and the teacher's approach to classroom management. Even the unconsciously held belief and the unexamined assumption have an impact on classroom practice and, therefore, on students' value systems. Thus, in designing their classroom programs, teachers will need to reflect on personal and societal values in terms of such things as the nature of humankind and the purposes of education, and to use the outcome of this reflection in choosing appropriate methodologies and learning materials for use in the classroom.

Such an approach, we feel, is a definite step in the correct strategic direction. At present, our skills in cognitive and technological knowledge far outstep our ability to apply (in personal and societal contexts) the ethical knowledge we have gained in previous centuries. Individual and corporate greed, a yearning for power over others, we/they dichotomies--all are still very much with us, to the detriment of both the individual and the society. It is as if we were well aware of what to do, but helpless at how to do it.

A multitude of educational philosophers and researchers have addressed themselves to this conundrum, but we feel that Jean Piaget comes closer than most in seeing that the resolution of the problem lies in educational programs and practice. Here we are not talking about Piaget's theory of child development so much as what he has to say about education generally. We refer particularly to two texts, To Understand Is To Invent (1948) and The Moral Judgement of the Child (1932).

Piaget stated that a school based on his theory would be radically different from those we see today because its aim would be different. For Piaget, the goal of education was intellectual and moral autonomy. This aim contrasts with the more conservative aim of traditional education, which is to transmit knowledge and values from one generation to the next.

The concept of autonomy, as Piaget defines the term, is simply being governed by oneself. It is the opposite of heteronomy, which means being governed by someone else. In Piaget's view, the achievement of autonomy depends a great deal upon cooperation:

> Cooperation alone depends on autonomy. With regard to logic, cooperation is at first a source of criticism; thanks to the mutual control which it introduces, it suppresses both the spontaneous conviction that characterizes egocentrism and the blind faith in adult authority (The Moral Judgement of the Child, 1932).

> Moral autonomy appears when the mind regards as necessary an ideal that is independent of all external pressure...Autonomy appears only with reciprocity, when mutual respect is strong enough to make the individual feel from within the desire to treat others as he himself would wish to be treated (The Moral Judgement of the Child, 1932).

For the ministries, the goal of achieving autonomy in the Piagetian sense is, we feel, a worthy goal to pursue and its reflection in curriculum documents issued by the ministries is urged. The current emphasis upon values in The Formative Years and OSIS is sound; a further stress upon progression from heteronomy to autonomy would do much to bridge the gap between what is and what ought to be.

6. SERVICE DELIVERY AND GOVERNANCE

6.1 Introduction

Given a tradition of publicly supported education in Ontario which goes back almost a hundred and forty years, it is natural for most people to expect that their formal education needs will be met by the public system. And the evidence of, for example, the last twenty years largely warrants such expectations, from the creation of the community college system in 1965 to the passing of special education legislation in 1982. In effect, as expectations have risen, and as needs have become more complex, so the efforts of the public system to meet them have visibly increased.

In the future, however, while demands on the system will continue growing in diversity and sophistication, the limits of government's ability to meet them, by itself, may well be reached. In response, goverment will have three options:

- to reduce the scope and scale of the present education system;
- to continue trying to meet needs even though resources are likely to be inadequate and services inevitably partial; or
- to devise new roles for itself and new ways of using structures, techniques and technologies that will be appropriate for mediating the complex needs that will arise.

The first, a severe reduction in scope and scale, is not viable. Expectations of such long standing cannot be thwarted without harming both the individuals who hold them and the society whose stability and progress depend on their being met.

The second would be ineffectual and therefore as potentially dangerous as the first. As the gap between the public's expectations and the ability of the public education system to meet them widened, the public's tolerance for government would likely decline. Public bureaucracy would become increasingly ineffective, the more so to the extent that it was forced to deal with needs which it neither understood nor had the resources to learn to understand. And most important, as people's learning needs remained unmet, both they and their society would risk losing their ability to cope with the changes that will inevitably come.

The third option is the one explored in this chapter. It demands, but also, reciprocally, guarantees the maximum in flexibility and adaptability. It proposes that not only individual learners and groups but also government should devise new roles for themselves in which their respective responsibilities would be less rigidly defined than at present so that both would become more able to learn and adapt.

Thus two major themes will be developed in the chapter: the need for support of the learning of individuals and groups, and the need for learning by government, in order that both may be able to better encounter change in the future.

First, with respect to the role of learners and groups in the province, it is clear that in an increasingly complex Ontario society, individual learners and groups, defined in terms of their communities of interest, must take the primary responsibility for determining their learning needs, and, within the prevailing governance and delivery structures of the day, for negotiating the means of meeting them.

Public concern for educational governance and service delivery in the province has historically focused on the responsiveness of government in meeting the pluralistic needs of the Ontario people, generally defined in religious, linguistic, ethnic, and cultural terms. This remain the case and will increasingly be so for the forseeable future. It follows therefore that for the period ahead the major role of government in governance and service delivery must be to encourage

and facilitate learners and groups through an appropriate diversity of means to take responsibility for their own learning and its outcomes, while at the same time, ensuring that an appropriate balance is maintained between the well-being of the individual and that of society as a whole. The tension between individual and societal goals and the need for more sophisticated ways for government to deal with it in creative ways was addressed in Part I. Research has shown that sustained learning and adaptation will take place at the individual and group level if the needs and the means of achieving them are derived at that level and if supporting facilities are made available by government (Fullan, 1982). For these reasons the emphasis of government must be on encouraging and facilitating, rather than on regulatory forms of control.

Government will be better able to provide these forms of support only if it equips itself with better means for listening, learning, leading, and governing--the primary business of government. This leads to the second major theme. We believe that government must be increasingly involved in the business of governance, and in relative terms, less involved in service delivery.

Five areas of strategic concern and related options, dealing with improved support for learning by individuals and groups, are set out in this chapter. They deal with provisions for the:

- direct support of individual learners
- support for teachers
- support for public boards
- support for independent extra-government agencies
- support for communities of interest

An additional four items are provided for consideration as they relate to improving the ministries' ability to learn and govern better. They are:

- provisions for the acquisition and interpretation of information

- provisions for assessing and reporting on individual and social well-being

- provisions for public consultation on the goals of education

- provisions for consultation with other government agencies

6.2 Support for Individual Learners

Given the complexity and changeability of modern society, there is a tendency for individuals to give up control of parts of their lives, and for institutions to take up this slack. But, for the individual, this is a false security; really all that has been gained is dependence. And for every increase in dependency there is an increase in expectation. However, individuals not only have the capability, they should also have the responsibility for designing and managing their lives. The ministries must review and adapt existing provisions for the support of individual learning and develop new approaches which do not undercut individual responsibility. To the extent that they are successful, individuals will be better able to prepare themselves for complexity and change.

Current concepts of learner support in Ontario are in an embryonic state. The ministries, through their facilitating policies and practices, continue to associate learning with, and limit it to, formal education. Even such forms of learner support as financial aid programs, educational and occupational guidance programs, and systems for the measurement of learning achievement (such as the Ontario Assessment Instrument Pool--OAIP) are mostly directed at the young who are in the formal system. Emphasis must be directed, for the foreseeable future, on developing a more comprehensive and better integrated set of provisions for the support of individual learners beyond the confines of the traditional formal education system and beyond the traditional compulsory learning years (SPTG, 1983d).

An enabling policy and legislative framework must be provided by government to help the learner to sustain his or her purposive

learning activities at all levels of individual growth and development and within chosen communities of interest. Government must not control the purposive learning process so much as influence it by providing opportunities for its sustenance. These learning opportunities must lead to individual fulfillment, as well as to the safety and progress of Ontario society as a whole.

This is not a new theme. A major conclusion of the 1972 Commission on Post-Secondary Education, for example was:

> Post-secondary education is not an activity confined within the walls of the familiar institutions of teaching and learning; rather, it is a pervasive, moulding force that affects all individuals living in our society, intellectually, creatively, and economically...The institutions, the programs, the learning process have relevance only as they relate to and involve the members of the society that maintain them (The Learning Society, 1972).

Our experience to date, working within the confines of formal education for the young, has not provided us with a sufficiently broad set of concepts or a language to talk about what an adequate set of support systems for learners might be. Government's objectives, in a general sense, must ensure that psychological, physical, financial, and informational barriers to purposive learning are removed and that outreach is provided by government to the greatest extent possible.

The ministries' recent policy paper on continuing education opens the door for the exploration of some of these new possibilities. It commits government to address itself to new as well as to traditional groups of learners in new settings. It provides an enabling policy framework within which boards of education can explore new possibilites for learner support. Further steps in this direction will be required.

If the ministries agree to the necessity of devising new roles for themselves in supporting individual learners and groups,

there are a number of areas to which attention must be directed in the near future.

Work should continue, for instance, on improving ways and means for monitoring and needs assessment. Essential to policy development is an accurate and flexible way of identifying who needs what learning, and how learning needs and potential clients change. Concomitant to such identification is the assessment of the physical and psychological barriers to learning as encountered, for example, by the physically disabled, or by immigrant students. In addition, rigid credentialism, whether related to those attempting to enter courses, or, indeed, those teaching courses, can act as another barrier.

Given sound assessment of these issues, however, answers can begin to be formulated to several important questions: What needs can best be met through formal learning in institutional settings, as we presently know them? Which cannot or should not? What new possibilities exist for the support of informal or non-formal learning, incidental learning, and day-to-day problem solving? What barriers exist to purposive learning by individuals in the province (Berg, 1983)? What are the possibilities for outreach by government which might better help sustain individual learning?

New approaches to program development, curriculum, and learning materials will also be needed, involving, for example, new means for consultation and improved response time for small diverse groups of learners. These approaches might involve, for instance, the increased use of volunteers. Because of the proliferation of curriculum and program offerings which will ultimately result, a better means of program linkage and learner guidance will also be required.

Finally, a major area of priority in the support of informal learning and problem solving by individuals and groups will continue to be those in the labour market. For those preparing to enter the market, this means developing more sophisticated approaches to general vocational development with greater emphasis on transferable job and life skills. For the employed, it means developing better ways for the

renewal of saleable skills, as a hedge against unemployment. For the unemployed the emphasis must be on developing more powerful approaches to occupational renewal and counselling.

6.2.1 Assessing Individual Progress in Learning

Assessing and reporting on individual progress in learning is one specific area of strategic concern related to the support of individual learners. We single this out for special attention because it is an example of a service which will be required and because it is a direction in which the ministries have already implemented certain potentially facilitating steps.

If we wish to develop new and more flexible ways of supporting the learning needs of individuals and communities of interest and of moving responsibilities for initiative closer to the learner there will be a need to develop means to assess progress and achievement in learning.

Government, in its role as public guardian, has two unique responsibilities in this area. It must help ensure that learners are able to assess their own progress, make comparisions with peers, and evaluate the means for learning that have been employed. It also has a responsibility to assess, in some way, the contribution of individual learning to the well-being both of the individual and of society as a whole. We will deal with the strategic implications of the first of these here and with the second in section 6.8.

The first responsibility, obviously, is the less traditional. The need for self-assessment of learning progress was not a central concern so long as learning took place in traditional classroom settings, using traditional means of teacher based instruction. Now, however, the ministries must provide means for the assessment of individual learning by learners in order partly to increase individual acceptance of responsibility for progess towards goals which have been self-defined, and partly to ensure that effective use is being made of

the increasingly broad range of delivery mechanisms and locations through which learning will take place.

Possibilities for moving in this direction have already been undertaken by the ministries in the development of the OAIP for the elementary and secondary schools and in modular training for occupational skills development. The experience gained in these areas must be used to extend those systems to cover a wider continuum of skills--not only cognitive, but also manual and affective skills as well.

Clearly, the development of cognitive skills and the acquisition of knowledge are essential to the well-being of both individuals and society, especially as we move into the post-industrial, information age. But they will need, more than ever, to be supplemented by affective and social skills, as our economy becomes more dependent on the production of information and non-tangible goods (Masuda, 1980) and as our society becomes more multicultural.

6.3 Support for Teachers and Teaching Technology

Teachers have been and to a large extent will continue to be the major mediators of the individual learning process. The changing nature of the curriculum and its demands on the teacher and on the teaching process were described in chapter 4. Here we examine possibilities for better supporting teachers in order that they may better perform their mediating functions in the increasingly complex learning environment which is anticipated. (The term teacher is used here in a generic sense; it is intended to refer equally to the human mediators of learning at all levels--teacher, trainer, instructor, or professor.)

6.3.1 Strengthening the Teaching Profession

The demands on the teaching profession at all levels have increased astronomically over the last two decades. They have resulted from pressures generated by the need for increased accommodation in the areas of early childhood and continuing education, and by linguistic,

religious, and ethnic groups, by new areas of learning and the need for higher levels of competency, and by the increased complexity of many of the skills and knowledges to be taught--especially those related to the job market and technological advancements. The increasing involvement of independent extra-government agencies in education and training also provides new contexts and opportunities for the contribution of teachers. The availability of new technologies alters not only what is taught but how it is taught (SPTG, 1982). These technological advances challenge the profession to think, work and contribute in different ways (SPTG, 1983a). Finally, there is the issue of the maintenance and renewal of the profession itself, given the aging of the current cohort of teachers and the apparent constraints on teacher intake and opportunities for in-service professional development. The avoidance of the loss of a generation of teaching and academic staff for Ontario's educational institutions is one of the foremost areas of strategic concern facing education in the province (Minister's speech to the Legislature, December 15, 1983).

From the inception of the public board systems for the elementary and secondary schools, government has been involved in setting policy for teacher preparation, in-service training, and the broader needs of the profession. A system of normal schools was developed which was recently consolidated within the universities as faculties of education for the preparation of both elementary and secondary school teachers. The establishment of the Ontario Institute for Studies in Education made possible new opportunities for in-service training, post-graduate work, and the involvement of professional staff in research and development.

In the area of teaching, current policies and practices of government and the profession bring with them historical baggage which does not always help in imagining what the role of the teaching profession might become in the future. Existing bridges must be strengthened and new ones established between the governance structures for education and those for the teaching profession. Better opportunities must be provided for joint learning by government and the

front-line workers in the field concerning the increasing complexity of education needs and issues in the province.

Specific matters of strategic concern relate to:

- Broadening the base for teacher preparation and in-service training to include new skills and understandings required for teaching in new subject areas under significantly different circumstances involving a broader range of education agencies working in a broader range of settings.

- Making better use of the specialized skills and cumulative know-how of teachers by involving them in a greater range of education-related activities and decisions. Teachers must continue to be effectively utilized in curriculum development and challenged by new opportunities to contribute to the development and utilization of new technology, contributions which go beyond the traditional classroom.

- Redefining the teaching profession by recognizing the broader range of potential contributions of other professionals, both within and outside the formally constituted field of education. The needs of a complex information and learning society require that professionals with special training in learning and education processes contribute to the setting of the public agenda as well as deal with the challenges which emerge.

  Within the field of formal education the profession must expand to include concerns for all levels of human growth, development, and fulfilment from the post-natal period, through early childhood, to university and continuing education, so as to be able to serve the multiple communities of interest in Ontario society.

- Broadening the structure of the profession to allow for the recognition and certification of workers in a vastly increased range of professional activity. Included should be activities in areas of research, learning materials development, technological

development, assessment, therapy, and care, as well as the traditional areas of classroom management and school administration. This will require the development of a new infrastructure and new practices within the profession involving both para-professional and professional workers.

- Strengthening the governance structure of the profession to better service the province in a period of greater sophistication and diversity in education. To what degree should teacher certification be removed from the direct initiative of government, the consequence perhaps being the separation of the unique self-interest of teachers from the broader public interest? Would the latter be better handled through the establishment of an independent body for the profession, which would resemble those responsible for the governance of other professions in the province?

6.3.2 Ensuring the Effective Use of Technology

New advanced technologies for teaching applied, for example, in computer-based learning and distance education are now available to complement and extend the traditional technologies offered by the printed page, radio, and television. They provide the teacher and the learner with new, more powerful ways of mediating the increasing complexity of learning needs. They also free the teacher to do different things while at the same time making possible the learning of certain types of skills more efficiently, thus leading, in many instances to higher levels of human competency (see chapter 4). New computer-based technologies make possible new kinds of learning and new ways of knowing and hold out new opportunities for development of aesthetic skills and understandings (SPTG, 1982; 1983a).

The effective use of the technology of the day has been perennially a matter of strategic concern in Ontario education. A high level of commitment to the quality printed media of the day, in the form of text books, followed the Common School Act of 1841. The authors of Living and Learning (Ontario Department of Education, 1968)

rated the teacher/technology issue second on their list of fundamental issues in Ontario education. Most recently the ministry has taken steps to ensure that Ontario school rooms will be equipped with a world class system of microcomputers and related software.

In the future, government must be increasingly circumspect in its policies as they relate to technological adoption, development, and impact assessment. History shows that, shortly after a new and effective technology is introduced into an area of activity, it will be quickly viewed as an indispensable means of achieving objectives. The result is that the adoption of technology forces questions to be asked and answered in certain ways. Our North American approach to technology has typically been "What can it do?" and "How can I use it?" In the future the ministries must be increasingly adept at assessing technological needs through questioning "What do we need?" and "Is there an appropriate technology to provide it?" (Weizenbaum, 1976)

A second matter related to the adoption of technology is that of appropriateness. There is a need for the ministries to be increasingly circumspect on the matters of "best use" of technology (see chapter 1). The key questions are "What is the best use of new technologies?" and "How can they be appropriately integrated into existing structures?" The ministries must ensure that new technologies which are adopted can do existing things better or do things that could not be done before.

Another central issue to be dealt with is that of the best arrangements for technological development in order that world class results will be achieved, that development and capital costs will be shared and distributed as broadly as possible, and that these costs will be recovered at the earliest possible time. For these reasons effective organizational arrangements must be sought for cooperation and collaboration in the design, development, and marketing of new sophisticated technologies. These may involve, for example various government agencies and levels, and joint ventures of governments with the private and not-for-profit sectors in the various aspects of

design, production, marketing, and user support, and in the sharing of resources, benefits, and risks.

Finally, and most important, there is a need for the ministries to be increasly sophisticated in their assessments of the impacts of secondary and unintended side effects of technological adoption. For example, what effects do different teaching technologies have on the structures of different subject matter, individual learning styles and attitudes, mind/brain development, the sense of individual well-being, the provincial goals and philosophy for education, and education costs and priorities?

6.4 Support for Public Boards

In this section, our emphasis shifts from direct support for learners and teachers to their indirect support through the established structures by which the mainstream of program delivery and governance has been traditionally provided. Our intent is to show how the system of school, college, and university boards may be both supported and supplemented so that the system will be better adapted to the changes that lie ahead and its existing strengths capitalized on.

The need to both support and supplement the established board structures arises from conditions previously outlined: the increasing pluralism in Ontario society, the need to explore common cultural bonds and interests, the possible threat of increasing cultural diversity, the increasing lack of coherence in social values, the continuing rise in expectations, the demand for increasing diversity in the range of programs offered, the continuing belief in the utility of some kind of core curriculum, the increasing scarcity of public resources, the increasing competition within government over the apportioning of these resources, and the increasing demand for public accountability.

Historically, in Ontario, education has been provided at the local level by a delegation of powers to local boards. In the case of the university sector, these boards have a tradition of independence from the central authority; in the case of public schools and colleges,

this independence is relatively less, though in different ways. We propose no fundamental shifts in these loci of control.

We see no evidence to suggest that the system of public boards which has served the province well in the past will not continue to do so in the future. The increasing diversity of needs to be met only strengthens our belief in the importance of a decentralized approach to the support of learning and education. What will be required, however, are major shifts in the efforts of the boards as they adapt to the changing conditions that have been noted. Possibly the most central of these has been highlighted in the previous section, i.e., the shift from a preoccupation with programming for formal education to a progressively broader concept of learner support. There seems little doubt that the boards must rethink the business they are in and progressively redefine their fields of interest more in terms of support for the "learner" than for "schooling".

It is essential that government provide an environment in which the school, college, and university board systems will be able to redefine their roles and to work collaboratively to determine what kinds of public support will best meet the needs of learners and teachers in coping with a changing world.

6.4.1 Refocusing Support Services for the Boards

Networks of human and intellectual resources for school, college, and university boards and for their institutions already exist in the form of agencies developed and maintained at public expense. Each has a different focus which has emerged out of its unique history and the conditions and needs of the times. Government must provide a climate which will encourage supporting agencies to work collaboratively to rationalize and refocus their public resources in order that their funds and expertise can be better adapted and utilized by the board systems.

In the case of the school boards, these resources include, for example, the six regional offices of the Ministry of Education, the

thirteen faculties and colleges of education, and the expertise developed by the boards themselves through their master teachers, curriculum coordinators, and resource centres. Similarly, for the Ministry of Colleges and Universities there are the twenty-eight offices and consultancies which provide support for skills development, as well as the Council on University Affairs. In addition, the Ontario Institute for Studies in Education has a broad mandate to service all levels of education. The fraternal and professional organizations representing the field have also made significant contributions to professional development at all levels. As well, other government ministries have interests in education and training, and may also act as resources. Possibilities also exist for greater cooperation within each board system (elementary/secondary, college, university) and between board systems and the ministries in meeting their respective goals.

We have not always deployed these sources of support in ways which are synergistic and which provide maximum assistance for new initiatives in program development, curriculum renewal, and in-service training and support for teachers and supervisory staff (see section 6.6). Areas of special concern are the strengthening of program linkages between the various levels of education, and improving the ability of the education community to respond effectively to provincially sanctioned economic and social priorities. Research funds available through the ministries, OISE, and the faculties of education could well be directed towards identifying ways in which maximum synergy could be achieved and towards helping boards take advantage of new opportunities or resolve structural problems.

Such cooperation and collaboration requires the pooling of information. New technologies of communication are available. New information networks could establish useful links between boards and other agencies. To implement such technology, and to establish such networks, are priorities which should command the attention of the ministries for the next decade (see section 6.7).

Several significant steps have already been taken by the ministries in this direction, including the establishment of the Ontario Education Resources Information System (ONTERIS) and the Education Computer Network of Ontario (ECNO).

6.4.2 Integrating Board Programs and Services

The various parts of the system of school boards and of college and university boards of governors and the institutions they are responsible for have evolved quite separately, at different points in time. These events were triggered by historical factors related to the public and political understandings of the day. Now, however, historical factors are relatively less important than are images of the future in suggesting how the school, college, and university systems can and must operate. Government must increasingly view the tripartite system of public boards and institutions as mutually supportive and interacting components of a common structure for the support of learning in the province. It must preserve the legislative independence of these board systems, while establishing a context in which they will be encouraged to seek new approaches to purposive collaboration in program development and service delivery which will be keyed to provincial goals for the support of learning and education.

A number of challenges exist which lead inevitably to this conclusion. The ministries have a policy on continuing education, yet no institutional framework exists which can speak effectively to the principle of a learning continuum on which the policy is based. It seems unlikely that the strategic concerns related to curriculum development and teaching, highlighted in chapter 5, could be effectively addressed without a better integration of school, college, and university resources. To be able to respond effectively to the diverse needs of linguistic, religious, ethnic, and cultural groups in the province is likely to require more comprehensive approaches to programming and service delivery than are possible within the confines of either the schools, colleges, or universities. These institutions were developed to deal primarily with differences in levels of skills, rather than with linquistic, religious, or cultural differences.

Finally, provincial and national social and economic goals related to unity, safety, and progress, can be better addressed through an integration of these independent systems for governance and service delivery.

This trend has already begun. It was addressed by the ministries in their various linkage studies and policies developed over the last several years. Elementary and secondary board systems were consolidated in 1967. In 1979, the government took steps towards a better integration of schools, colleges, and universities through the consolidation of the two ministries. The ministries must now consider what additional steps are appropriate to ensure a climate within which further integrative measures will be taken. Such measures build on the strengths that have been developed, and recognize the unique contribution of school, college, and university boards to local, provincial, and national goals.

Precedents exist in other jurisdictions for fully integrated board systems--as for example the Local Education Authorities (LEAs) in the UK. Recent developments in Sweden are also moving in a similar direction (Berg, 1983). In Ontario the precedent exists for the integrating of non-education government services on a regional basis. We must look carefully at what has been learned from these precedents as additional strategies are explored.

6.4.3 Providing Direct Service by Government

The increasing demands for accommodation and the increasing complexity and cost of service delivery will inevitably leave certain areas of service beyond the reach of school, college, and even university boards. In these instances government must supplement rather than support public board systems. Traditionally, the ministries have provided direct service in areas related to the schools and colleges such as correspondence education, apprenticeship and manpower training, and the provision of schools for the handicapped.

There is no alternative but for the government to maintain an adaptive and flexible capability for direct service. There are perhaps two criteria to be addressed. The first is that of individual and social well-being. Do the services which can reasonably be provided through the public board systems, or through the collaboration of independent extra-government agencies, guarantee equity and fair treatment and the meeting of provincial and national objectives? The second criterion is that of innovation. External assistance for boards and independent agencies is a major factor in stimulating social, economic, and educational change. The ministries may provide this needed stimulation either alone through, for example, undertaking pilot or demonstration projects, or in collaboration with other agencies. In any case, provisions for direct service should be under constant review as new and different capabilities and possibilities for service delivery by boards and independent agencies evolve.

6.5 Support for Independent Extra-Government Agencies

While considerable public resources for the support of education exist in Ontario, an equally considerable, and as yet largely untapped, storehouse of extra-governmental resources also exists. These independent agencies, ranging from commercial firms, to self-help groups, to voluntary or not-for-profit organizations, are often involved in some kind of learning enterprise, and have consequently built up a store of educational experience and interest which could--and should--be of use to the public boards in helping to meet learning needs within their jurisdictions.

Perhaps the most promising of the new organizational forms for delivering educational services are the extra-government, voluntary, and non-profit organizations. What is most notable about them, however, is not their novelty but the fact that they are as old as our civilization--indeed many of the earliest public schools were voluntary organizations. What is new is their variety and their ability to be responsive to new and diverse needs and demands. This fact is significant because it reflects both their own diversity and the continuity over time which has characterized the volunteer

non-profit sector. Today, as in the nineteenth century, there is a need for citizens to get involved and stay involved. We have experienced and are likely to continue to experience what Claude Levi-Strauss has called uniformity of function but diversity of form in the delivery of education service in the province (Totemism, 1971).

Independent agencies have the potential for providing the increased diversity of services required since they are more highly customized to individual and group needs. They are likely to be seen as more responsive and less alienating. Indpendent agencies might provide some services at lower costs, with the possibility of sharing certain cost components with government.

In the past, while legislative provisions in Ontario have allowed for the involvement in public education of independent, extra-government agencies, their contributions have been largely viewed as being outside the mainstream of service delivery. And yet government policy has long recognized the contribution to curriculum development of the family and community agencies. Interaction between school and community to facilitate the achievement of curricular goals in the areas of athletics and cultural activities has been promoted (OSIS, 1983). A separate school system has evolved and private schools exist in increasing numbers, both sectarian and non-sectarian. Private vocational schools have developed and strong pressure exists for provincial recognition of degree granting institutions.

However, it is in the area of occupational and labour market skills development where the most significant movement in this direction has occurred. Here programs have been successfully developed which allow for the participation of employers and private agencies as full partners in skill development in a variety of settings. Examples are apprentice programs, Training in Business and Industry (TIBI) programs, and Employer Sponsored Training (EST) programs.

In the future, an increased involvement of independent agencies as partners with boards of education, colleges, and universities must occur, for several reasons. It will increase the

ability of the education system to meet the increasingly diverse learning needs of the population, thereby increasing public satisfaction. It will allow for the possibility of distributing the costs of learning more broadly--especially the costs of meeting special needs. As the various communities of interest seek acceptable and feasible ways to achieve their learning needs, new vehicles for collaboration in program development and delivery, financing, and administration will evolve. The ability of the board systems to adapt will be enhanced. In effect, the scope of the publicly sanctioned system for education could be expanded while, in relative terms, the scope of the public delivery system could be reduced.

There is ample evidence to suggest that independent extra-government agencies do have objectives which are shared in common with those of the publicly sanctioned system. Policies have been developed to variously recognize, certify, inspect, ensure accountability, and, in some instances, actively promote the contribution of independent agencies as partners with government in education and training. Based on this experience and in order to meet the challenges ahead, government must develop an enabling policy framework which will encourage school, college, and university boards to explore new possibilites and facilitate the active involvement of independent extra-government agencies.

If government were to proceed in this direction, the following would be matters for policy consideration:

- How much pluralism and diversity in the means of service delivery can be incorporated in an expanded, publicly sanctioned system without destroying the board systems? What areas of activity are appropriate for the involvement of independent agencies working within the board systems as autonomous agents?

- How might independent agencies and government agencies be brought into communication with each other so that the interest of each in the other might be aroused? How might the involvement of

independent agencies in areas of special priority, such as early childhood education, or continuing education be facilitated?

- What processes would be required for recognition, certification, monitoring, and enforcement in relation to independent agencies? How might appropriate standards regarding the content, focus, and balance of learning experiences provided by independent agencies be ensured? What mechanisms for the protection of the public from unscrupulous agencies would be required.

- How might public resources be allocated to independent agencies for the delivery of services? What economic conditions would be required for participation? What devices for fiscal accountability would be required?

- What would the basis be for collaboration and financial support in the use and development, say, of curriculum and learning materials, or professional and technical support?

6.6 Support for Communities of Interest

If we wish to be able to respond more flexibly to the increasing pressures of individuals and groups with special learning needs, and at the same time accommodate them within the framework of the public board system, the question of degree arises. Too great responsiveness could lead to fragmentation of the publicly sanctioned system and the rending of the social fabric in the province; too little could lead to the public system's being seen as irrelevant or as indifferent to the legitimate needs of the people.

Ryerson's answer to this question was decentralization of responsibility. He made provision for a central authority to distribute funds voted by the Legislature, to prepare regulations and curricula, to authorize textbooks, and to improve the quality of teaching through certification, inspection, and the establishment of a normal school; at the same time, local school boards were empowered to raise funds required apart from the grants, to hire and fire teachers,

to implement curricula, to select texts, and to maintain school facilities (SPTG, 1983b).

We believe that the flexibility and adaptability of the public system may be further improved by following this tradition. Our aim is to establish a publicly sanctioned system for service delivery and governance which will be able, on the one hand, to respond to the needs of individuals and groups in the province, and on the other, to effectively address itself to the question of needed balance between the well-being of the individual and that of the province as a whole.

We have proposed two means for achieving this aim in the previous sections (i.e., by strengthening the current board system so that it may better speak to the broader range of learner support systems which will be needed, and by providing an enabling policy framework whereby independent extra-government agencies may be able to work with the boards to better contribute to the achievement of government's goals for learning). In this section we propose yet a third provision for moving the responsibility for the support for learning closer to the learner in order that purposive learning activities may be better sustained by individuals within their own communities of interest.

At present, no means for negotiating group needs exist at the regional or municipal level, except for those communities of interest which have developed strong power bases. Many groups, no matter how valid their needs will never develop power bases that are strong enough to hold government's attention, because they lack sufficient numbers, because they are not naturally vociferous, or because they lack the necessary technical skills and informational resources. We therefore propose that government develop an enabling policy framework to formally recognize communities of interest for the purpose of identifying and defining common learning needs, and for negotiating with local boards and independent agencies the best ways of meeting them.

A precedent for the sharing of leadership in meeting local education needs has been developed in the area of occupational skills development. Here the traditional structures for consultation with particular interest groups have evolved into officially recognized and incorporated groups for local governance and administration. Community Industrial Training Committees (CITCS) are now an established element for ensuring responsibility for occupational skill training. The approach has been shown to be effective in identifying needs, developing strategies for meeting them, and encouraging local agencies to participate (see Ontario Ministry of Colleges and Universities, Employer's Guide: Training in Ontario and CITC Evaluation: Training in Ontario, both undated). Other forms of community organization are also being developed, such as the Industrial Education Council of Hamilton. Recent examples also exist in the area of continuing education. Other possibilities include professional and recreational groups, as well as those which have common ethnic linguistic, religious, or other cultural interests.

The establishment of such enabling provisions by government would not be an open invitation for increased demands on the public purse by individuals and groups. Experience to date suggests that such groups rely for their success not on the transfer of funds from government, but on the transfer of knowledge and skill. Neither should the establishment of such groups be seen as means of providing support for special interest groups to the exclusion of society as a whole. Rather, what is intended is the provision of encouragement and support to communities of interest so that they will be able to gain access to technical and informational resources which will allow them to better understand their own unique learning needs, while at the same time exploring how these needs might relate to provincial curriculum objectives, goals, and philosophy of education. Organized communities of interest must be viewed as opportunities for better service, rather than as potential threats to the achievement of public educational goals.

The establishment of such a network of recognized groups would not serve to extend the public bureaucracy, since it encourages

instead voluntarism in the provision of time, expertise, and personal resources. To capitalize on these resources such groups must be provided with a climate in which they can succeed; but they must also be allowed to fail. By this means government limits its resources and interests to those areas of pluralism in the province were purposive learning can be reasonably expected to take place in a manner which is likely to benefit both the individual and society. Government must be cautious about extending services where they are not needed or justified in the broader public interest.

To the extent that such a system of formally recognized communities of interest evolves in the province, school, college, and university boards will have defined points of contact on an individual community basis. These will allow the boards to speak more effectively to the diverse needs of their jurisdictions. Government could be increasingly confident of its ability to provide services more equitably, possibly at reduced costs. Finally, communities of interest would act as a kind of information network which would help government understand changing patterns of learning needs and adjust its governance and service delivery functions in appropriate ways.

To proceed in this direction, the ministries must determine such matters as: the means for identifying communities of interest which have potential for recognition, the requirements for recognition and public accountability, needed operating linkages to public boards and institutions, the means of encouraging cooperation with volunteer agencies and other community groups, and the administrative, technical, and financial support services which will be required.

6.6.1 Providing Professional and Technical Support Services

Throughout this chapter we have addressed ourselves to possible strategies by means of which responsibility for learning and its outcomes is moved from government closer to the learner. These have involved provisions for both direct support of learners, and indirect support through new mechanisms for the assistance of teachers, boards, independent agencies, and communities of interest.

A requirement common to the success of all the strategies discussed in this chapter is the availability of a network of professional and technical support services to provide guidance and facilitation which is appropriately linked to public goals for learning and education in the province (Fullan, 1982).

As new forms of service delivery are developed, by enhancing support for the various public boards, and by inviting extra-governmental agencies and communities of interest to play a significant part (see sections 6.4, 6.5, 6.6), there will be an increased need for government to extend its professional and technical support services. They are a powerful and acceptable way both of ensuring responsiveness and of achieving a measure of quality control, as the responsibility for learning and its outcomes in moved closer to the learner. As such, they are the more appropriate to a system which is becoming more highly diversified and which requires more collegial--and less bureaucratic--forms of influence and control.

Thus, as the movement to diversification and to decentralization of responsibility continues, sustained purposive learning as it relates to the need of individual and social well-being will depend more and more on the adoption by government of strategies for outreach and influence and less and less on direct legislative and regulatory intervention.

The need for professional and technical support by government must be met in a number of ways: by the provisions of professional and technical support staff to consult with learners, groups, and teachers; by the establishment of resource centres for learners and teachers as independent information brokers; by the development of curriculum guidelines; and by the development of exemplary course and lessonware.

Within the context of formal education, Ontario has developed strengths in all these areas, especially with regard to the elementary and secondary curriculum and skills development. For the future, the current allocations of responsibility and methods of funding for professional and technical support should be reviewed. Are they

adequate to future requirements, as responsibility becomes increasingly decentralized? There should also be consideration of ways of refocusing and integrating existing professional and technical support services, such as those provided by the field centres of the ministries, the faculties of education, and OISE (as noted in section 6.4), in order to service a new range of clients--including independent learners and groups, extra-government agencies involved in service delivery, as well as the traditional clients--teachers and boards.

6.7 Provisions for the Acquisition and Interpretation of Information By Government

What has been said earlier about learning as a form of adaptation applies to government as well as individuals. Like people, organizations must learn in order to survive. Like people, too, the ability of organizations to learn successfully depends upon their ability to acquire and intepret information and to respond to it appropriately. If the environment changes, organizations will have to change too, or risk becoming irrelevant in the eyes of the public.

There are two areas of strategic concern to be considered here. The first, which is dealt with in this section, relates to what government needs to know in order to fulfil its mandate in service delivery and governance. The second, which is dealt with in the sections that follow, relates to how government might organize itself to better acquire, interpret, and use information.

If government is to maintain a leadership role in education and to govern effectively, it must develop new ways of learning about, and adapting to, its environment. It can help itself to do this by developing a more comprehensive and better integrated infrastructure for scanning and analysis, by making use of such existing structures as the advisory and consultative bodies that have already been established (such as the systems for provincial and cooperative reviews, contract research, and various ad hoc review committees), and by refocusing them as required to ensure an appropriate futures orientation. Government must improve the means by which it integrates information on

long-range strategic issues with that on shorter range, more operational concerns. It must also develop better ways of obtaining multiple perspectives on, and critical analyses of, ideas about the future.

These improvements to its information acquisition processes having been made, government will need several kinds of information to better play its leadership role. Information will be required on the conditions for individual and social well-being in the province, and those specifically related to learning and education (see section 6.8). From this base, government should identify those conditions and needs that will likely have to be negotiated with the public in the coming years.

Since experience has shown that trends in Ontario society rapidly appear on the public agenda as expectations of the education system (for example, changes in ethnic, religious, and linguistic patterns), pressures driving society should be monitored for changes. Similarly, trends in the types of learning activities being, or likely to be, undertaken by people should be monitored (SPTG, 1983c). And finally, the needs and expectations of communities of interest that are likely to press for accommodation within the public system should be identified through, among other things, public dialogue and consultation (see section 6.9).

If the best use is to be made of this information, government will have to adapt its planning and decision-making facilities to the realities and opportunities of the information age. With few exceptions at present, public (and private) organizations are organized hierarchically. Power is exercised by means of the compartmentalization of information at lower levels and by giving each higher level access to a comparably broader range of information. This unequal access to information concentrates power but dilutes responsibility. In the post-industrial, information society this will be unnecessary, not to say inappropriate. Techniques for dispensing information widely and quickly throughout all levels of an organization

will be increasingly available along with the decision support systems required for its use.

This suggests that newly emerging communication techniques and decision support systems must be carefully monitored and, as they become developmentally mature and cost-effective, utilized, so that those working at the front lines of the education system, as well as senior management, can have rapid and comprehensive access to all the information resources of the organization and be able, consequently, to make more rapid and better informed responses to local issues.

By these means collaborative and collegial decision making will be enhanced, and government policies and positions will be better understood and acted upon.

6.8 Provisions for the Assessment of Individual and Social Well-Being

In section 6.2 we spoke to the need, and suggested how, to assess individual progress in learning. Here our concern moves to the need to assess the effects and contributions of learning on the well-being of individuals, groups, and the province as a whole.

A major theme running throughout our analysis of strategic concerns has been the need for a better understanding of individual and social well-being in the province and the possible contributions to well-being by the public education system. The overriding concern, from a strategic perspective, is how to achieve an appropriate balance between the well-being of the individual and the well-being of the province as a whole. In order to provide for the needs of its people the province itself must achieve a viable level of integrity and progress.

One essential aspect of social well-being is the recognition by citizens that the ministries are committed to achieving, as fully as possible, equality of opportunity. As we have outlined in Part I of

this document, the right to opportunities for learning, growth, and fulfilment is a well established tradition in Ontario. The ministries have progressively recognized this right by extending an increasingly broad range of learning opportunities within the public system. But there are significant reasons why government must base these extensions of opportunity on a more sophisticated view of the idea of equity and on a broader concept of well-being: the increasing pluralism of Ontario society, the increased diversity of learning needs for both individuals and communities of interest, and the risks to both the individual and society of failure.

Furthermore, equality of opportunity alone does not guarantee equity. For example, though there may theoretically be a place for every qualified learner who wishes it in some post-secondary institution, some learners may be prevented by their background, or by lack of appropriate learning circumstances, from taking up their places. The ministries have taken a number of steps over the last two decades to deal more effectively with the question of equity as it relates uniquely to formal education. For children and youth within the compulsory school years, the holding power of schools has been increased by providing additional places and by providing schools with different "climates". The holding power of programs has been greatly improved by increasing the diversity of program offerings suitable for university and non-university-bound youth and through flexibility in the requirements for accreditation and graduation. The provisions for special education and for French-language instruction are also significant attempts to achieve new standards of equity and fair treatment within the formal public education system.

Similarly the expansion of the university system in the 1960s, the development of the Colleges of Applied Arts and Technology, the expansion of apprenticeship and trades training, the expansion of program offerings for part-time and full-time attendance, and the adoption of affirmative action measures have made additional progress towards equity beyond the compulsory school years.

Yet, individual well-being is more than equality of opportunity, equity, or fair treatment. These concepts speak only to a limited subset of individual needs. They do not speak at all to the needs of society as a whole, nor to learning outcomes and their effects on the sense of well-being of either the learner or society. The ministries must be increasingly concerned with the assessment of both individual and social well-being and with maintaining an appropriate balance between them in a culturally pluralistic province, in a period when the key to personal fulfilment will be increasingly dependent on individual learning, when both provincial and national goals clearly respect the preservation of cultural identity, when the major economic products of the province will be information and ideas, and when broad societal learning will be critical to the adaptability and survival of the province in a period of rapid change.

From a strategic perspective, the assessment of purposive learning rests on the answer to the question: Have learning outcomes contributed to a sense of individual growth and fulfilment, to cultural identity, and to the unity, safety, and progress of Ontario society? While new concepts of individual and social well-being and its measurement are emerging along with understandings about the needed balance between them, we are still along way from dealing effectively with this question (Haberman, 1975; OECD, 1976).

Among the critical issues to be dealt with are:

- How much diversity in the curriculum is required for enhancing the possibilities of social progress and maintaining individual and cultural identities?

- When does diversity in individual and cultural values and the influence of self-interest groups lead to social decay (Olson, 1981)?

- How can matters of national and provincial unity be reflected in the curriculum in acceptable terms, building on national and

provinical identities and shared meanings, while not promoting provincialism and nationalism in inappropriate ways?

. At what point will a publicly supported education system be seen as contributing to societal problems, rather than to their solution?

Other issues of a more operational nature are those concerned with:

. The negotiation of values as the basis for developing indicators and measures of individual, cultural, and social well-being

. The development of appropriate organizational arrangements for measurement, interpretation, and reporting. Precedents exist in Ontario for several approaches, including independent corporate structures (such as The Ontario Economic Council) and advisory councils drawing on expertise from number of sources

. The assessment of legal implications of collecting and reporting information on well-being

6.9 Provisions for Public Consultation and the Goals for Education

In the previous sections, we have suggested new ways of providing support for individual learners and groups, and new ways of supporting and extending the traditional Ontario board-based system of service delivery and governance. Such activities cannot be successfully mounted without public dialogue and consent. Although government presently invests tremendous resources and energy in the processes of consultation and public dialogue, it seldom is credited with doing so. Clearly there is a need to review, refocus, and restate the process, not only to develop better ways of both acquiring, interpreting, and sharing information for strategic planning, but also to develop consultative modes which are effective and widely acknowledged to be so.

The two strategic concerns and proposed options in this section have to do with government's ability to be responsive and fair in its leadership role, and with its ability to help maintain an education system that is seen to be publicly sanctioned.

In a period when increasing demands will be made for the accommodation of individual and group interests, government will be able to perform its tasks more responsibly the more it is seen as being accessible, conciliatory, and part of the solution instead of part of the problem. Many current mechanisms for public consultation are reactive rather than proactive; they deal with issues which have already become critical, where lines of contention have already been drawn. As a result, they operate defensively.

Government must be better able to sense the emerging public agenda. The earlier government can identify trends in public expectations, the more effectively it will provide, through consultation and public dialogue, opportunities for issue clarification and in-depth analysis. It will also be better able to help ensure that all groups will be heard, especially those not likely to be represented through traditional public forums. To the extent that citizen participation models are appropriately used by government in decision making, the power of clamorous special interest groups will be reduced, and the genuine public interests of the province in education will be more likely to surface.

In the future, even more perhaps than in the past, government's responsibility for leadership in education, as well as its public accountability, must be sustained largely through the process of regular public review and renegotiation of the goals of education. Without some regular forum for public legitimation, it will be increasingly difficult to establish a common set of values on which a pluralistic society may base its educational goals and set reasonable public expectations for government.

To prepare itself adequately for public discussion, government must improve its ability to learn what dominant or

conflicting values will emerge in the ensuing decade. And it must develop a system for analyzing the conditions of individual and social well-being in the province (see section 6.8). In order that operational issues and parochial concerns are put into proper perspective, the primary focus of the negotiations must always be on the future, and on social as well as individual well-being. The negotiations must be as comprehensive as possible, to deal with needed support for learning at all levels of individual growth and development within various communities of interest and with the various levels and sectors of education, from elementary and secondary to colleges and universities. And areas partially outside the established responsibilities of government, such as continuing education, must be addressed. From these public negotiations would flow mission statements for the public boards and for their relation with independent agencies and the communities of interest (see sections 6.4, 6.5, and 6.6).

The matter of public accountability for the effects produced and their congruity with negotiated goals for learning and education will be subject to increasing political and public concern. We have noted in section 6.8 the need for a refocusing of our concepts of excellence and its indicators in education in terms of individual and social well being. In an earlier section (6.2.1) we also spoke to the need for better means of measuring individual progress in learning and ways by which this could be accomplished, for example, by an expansion of the OAIP concept. We note here, parenthetically, that mechanisms have also been developed for making systematic judgements about the acceptability of institutional performance and educational outcomes related to the schools in the province through the system of provincial reviews and through the Cooperative Evaluation and Development of Schools System (CEDSS). A system for college evaluation (CAPRI) is also in use. Experience with these systems provides a basis for developing more sophisticated approaches to the evaluation of learning outcomes and satisfaction of the need for accountability.

6.10 Provisions for Consultation with Other Government Agencies

A major strength of the Ontario education system lies in the mechanisms that have been established for the sharing of responsibilities between the province and the regional and municipal governments. These have provided a high level of stability for public education in the past. In the future, however, new issues affecting jurisdictional roles and responsibilities will arise involving both municipal and federal levels.

Many educational issues are now matters of national as well as local and/or provincial concern. For example, knowledge is now seen as a means to national survival, information as a major economic good, and the development of shared social and cultural values as the key to national unity. The increasing costs of developing sophisticated technologies and courseware for education are perhaps better born nationally (see section 6.3). Other issues have been raised by federal interventions, such as those related to the new Charter of Rights, multicultural policies, French language policies, and native language and rights policies.

There are, as well, educational issues which are the joint concern of provincial governments, such as interprovincial mobility. And within the province, some jurisdictional concerns also exist: some eleven Ontario ministries have interests in the field of continuing education, and the provision of services for very young children may soon become a matter of debate between the Ministry of Community and Social Services (for whom it is a matter of care) and the Ministry of Education (for whom it will be a matter of education). The Ministry of Colleges and Universities depends on the Ontario Manpower Commission for much of its information on changing conditions and needs for occupational skills training.

These concerns will require the use of increasingly effective mechanisms by the ministries for consultation and collaboration with other agencies and levels of government to deal with increasing complexity, and not only to establish appropriate jurisdictional

responsibilities, but also to guarantee an equitable sharing of costs. Failing this, there will be the inevitable tendency towards duplication of effort and expense, and such dialogue as does take place will do so in an atmosphere of confrontation and distrust.

In this matter, as in the other areas of strategic concern that have been identified in this report, we see in the current situation opportunities for exploring new options for dialogue across traditional jurisdictional boundaries, and for government agencies to devise new roles and functions for themselves, so that the increasing complexity of the learning needs of the province will be effectively mediated in the future.

POSTSCRIPT

As we suggested in the foreword, this report has been prepared to be a planning resource. It is intended to stimulate thinking in the ministries about what social and educational conditions are likely to have an impact on education in Ontario in the next five to ten years, and about what possible courses of action may be undertaken by the ministries to prepare for these changes. As such, the report is not, itself, a strategic plan, but rather one key element in the preparation of a strategic plan.

It is intended that the report be distributed to divisions and branches within the ministries. Their responses to the report will form the other key element which will issue in the preparation of a strategic plan. When ratified by the organization, this plan will, in turn, provide a guide for the divisions and branches in policy review and development, priority setting, resource allocation, and the preparation of detailed plans and budgets. In effect, this strategic plan will set directions for the ministries in terms of:

- What image of learning and education in Ontario should be realized five to ten years ahead?

- What must be done in the next one to five years to prepare for the period five to ten years ahead?

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